

# **Mother-Child Verbal Interactions in New Zealand and Malaysia: A Cross-Cultural Comparison**

---

A thesis submitted in fulfilment of the requirements for  
the degree of Doctor of Philosophy in Speech and Language Sciences

Department of Communication Disorders  
University of Canterbury  
Te Whare Wānanga o Waitaha  
Christchurch, New Zealand

Sharimila Magdeline Ambrose (née Adaikkalasamy)

October 2015

---

# DECLARATION BY AUTHOR

---

I hereby declare that the material presented in this thesis is my original work, except as acknowledged in the text, and has not been previously submitted, either in part or in whole, for a degree at this or any other University.

*Sharimila Magdeline Ambrose (née Adaikkalasamy)*

# ACKNOWLEDGEMENTS

---

This PhD journey has been an incredible, challenging and exciting voyage into the ocean. The expedition has taught me to surf with the waves and to develop the foundational skills required to build a boat in order to survive the academia ocean. My adventure and survival in the ocean would not have been possible if it were not for my loving family, friends and my two very knowledgeable, experienced and wise sea captains. They are my supervisors, Professor Thomas Klee and Associate Professor Catherine Moran, who were on their well-built boats in the sea, while I was out in the ocean! I have enormous admiration and respect for both of them as throughout this voyage, they did not provide me with the fish and boat to survive but taught me the skills to fish and build a boat to survive. Their approach has equipped me with invaluable skills and enabled me to discover the treasures of the research ocean. Tom, thank you for believing in me and for the time you have taken to nurture my research skills. I appreciate your ability to guide my thinking process, your humour and valuable comments. Catherine, thank you for swimming with me in the ocean, when I needed you the most. You have taught me to see the 'bigger picture', to build bridges and create a story. My heartfelt gratitude to both of you.

My survival in the ocean was made possible by several sea captains who rendered their help. Thank you Dr. Tami Howe for your advice in constructing the survey. Dr. Elena Moltchanova, thank you for the statistical advice and guidance. Dr. Lucy Johnston, thank you for airlifting me out of the ocean and assisting with the university procedures and refunds, when I had to cope with a personal loss in 2012. Dr. Stephanie Stokes, thank you for the funding for conference travel. Dr. Dean Sutherland, thank you for your encouragement and the opportunity to work with your research project: clinical work kept me joyfully afloat.

If it were not for the study participants in New Zealand and Malaysia, I would have hit an iceberg. A huge thank you to all mothers and their children who took part in the study. Thank you to the school principals, teachers and organization leaders who helped in the project. To my dear friend, Jennifer Peters: thank you so much for kindly allowing me to use your busy clinic facility in Kuala Lumpur to conduct my research. I am grateful and humbled by your generosity, support and encouragement. Thank you too to Kay Solomon, Rachel Vijayan, Catherine Khor, and Hasliza Abdul Halim for your help with survey content and translation. Thank you to Ooi Zhen Sern, Danielle Seah and Daniela Buehler for completing the accuracy and reliability tasks.

I am grateful to the support of friends who were in the same ocean as me. Dr. Wong Tze Peng, thank you for encouraging me to embark this journey at the University of Canterbury and for your help when I first arrived in Christchurch, post-earthquake. Dr. Jayne Newbury, thank you for your friendship and prayer support. Dr. Asifa Sultana, thank you for all the encouragement! A huge thank you to all my friends at the Child Language Centre and at No. 19 Creyke Road office: your support, encouragement and the numerous coffee chats have kept me warm and focused.

My voyage at sea was further sustained by friends in larger Christchurch and Kuala Lumpur. In Christchurch, a special thank you to Russell James and Margaret & Keith Jenkins, and everyone who hosted us at Operation Friendship; my Thursday ladies group, prayer ministry team, members and pastors of Avonhead Baptist Church; my Bible Study Fellowship leader, Linda Powell, and members. Thank you to my Kiwi mum, Bev Austin, and close friends, Julia Smith, Heather & Bruce Heyworth, Sharon & Alex Seah, Ivy Yap, and Mailee Stanbury. I appreciate your love, deep care, support, encouragement and the delicious home-cooked meals. In Kuala Lumpur, thank you Catherine Renu, Loretta Mary, Cecilia Santiago; members of the Dwelling Place Community Church, especially to Ps. David & Karmen Packiam, Chui Mee & Ng Toong Onn, and Auntie Jo, for your support and encouragement. To Cindy & Rockie Siew, Ps. Jonathan & Yoke Chin, and Yi May & Fabian, thank you for holding us together with love and prayer at our lowest point and helping us cope with our loss.

I want to thank my family and in-laws for strengthening and refreshing us during the voyage. Mum and Dad, I am forever grateful and indebted to your immense love, support (even financially), encouragement and continuous prayer support. I thank God that He has given you both a long and healthy life. To my supportive and loving siblings, Shantini, Shobana and Suresh, and sister-in-law, Agnes, thank you cheering me on. Last but not least, my dearest husband, Lawrence Ambrose, thank you for your great love, patience, unwavering prayer support, and for enduring this voyage with me. Through thick and thin, you shared the sorrows and joys, sheltered me, and cooked our meals, with love. Thank you, dear. This PhD is yours as much as it is mine. As I complete this sea voyage and start another journey in the academia ocean, I want to thank God for being my source of strength, peace and wisdom.

**“But those who wait on the Lord shall renew their strength; They shall mount up with wings like eagles, They shall run and not be weary, They shall walk and not faint” (Isaiah 40:31).**

*With deepest gratitude,  
Sharimila*

# DEDICATION

---

*For my loving parents, Mary and Adaikkalasamy, and  
my dear friend, Jennifer Peters:*

*In the course of my PhD voyage, you have endured both great joy and much sorrow  
in your lives. I am sorry for not being there for you at your lowest times.*

*May the peace of God strengthen and refresh you always.*

# ABSTRACT

---

The thesis examined the cultural belief systems of mothers related to early mother-child interactions in New Zealand and Malaysia and within the Malaysian multicultural subgroups. The overall aim was to examine reported and observed interaction patterns of these cultural groups and to determine the relationship between specific measures of mothers' verbal productivity and interaction behaviours with children's verbal productivity. Two studies with different methodologies were designed.

The first study used a survey to examine the reported beliefs and practices related to mother-child interactions of New Zealand and Malaysian mothers. A total of 284 mothers with children between 2- and 4-years old completed a written questionnaire on aspects related to talking with children, family and child-rearing values, and teaching and learning patterns in young children. Chi-square analyses revealed New Zealand and Malaysian mothers differed significantly ( $p < 0.001$ ) on 39 of 60 belief and practice statements. Subgroup analysis revealed Malaysian mothers of Malay, Chinese and Indian ethnicities were more similar than different in their reported beliefs and practices; however, there were some statistically significant group differences.

In the second study, a subsample of 48 Malaysian mothers was video-recorded interacting with their children. Mother-child dyadic language samples were recorded, transcribed and analysed. Measures of verbal productivity and interaction behaviours were coded and statistically analysed. The findings revealed most mothers, irrespective of their ethnicities, used response-control utterances when interacting with their children. Correlation analyses revealed mostly positive relationships between measures of mothers' and children's verbal productivity, and mostly negative relationship between measures of mothers'

interaction behaviours and children's verbal productivity. Results are discussed with reference to the literature, Bronfenbrenner's ecological model and language-learning models.

The findings have implications for Speech-Language Therapists who use intervention programs that recommend the use of language-modelling utterances to develop children's language skills. A five-point guideline to navigate belief systems when working with diverse populations is proposed.

# PRESENTATIONS RELEVANT TO THESIS

---

## CONFERENCE PRESENTATIONS

Adaikkalasamy, S.M., Klee, T., Moran, C. (2014). Cultural differences in beliefs and practices related to parent-child interactions among Asian and Western mothers. *Poster presented at the American Speech-Language & Hearing Association (ASHA) Convention, Orlando, Florida, USA, 19 - 21 November.*

Adaikkalasamy, S.M., Klee, T., Moran, C. (2015). Asian mothers' observed parent-child interaction patterns and their relevance to working with multicultural populations. *Paper to be presented at the American Speech-Language & Hearing Association (ASHA) Convention, Denver, Colorado, USA, 12 – 14 November.*



# TABLE OF CONTENTS

---

<b>DECLARATION BY AUTHOR.....</b>	<b>i</b>
<b>ACKNOWLEDGMENTS.....</b>	<b>ii</b>
<b>DEDICATION.....</b>	<b>iv</b>
<b>ABSTRACT.....</b>	<b>v</b>
<b>PRESENTATIONS RELEVANT TO THESIS.....</b>	<b>vii</b>
<b>TABLE OF CONTENTS.....</b>	<b>viii</b>
<b>LIST OF TABLES.....</b>	<b>xii</b>
<b>LIST OF FIGURES.....</b>	<b>xiv</b>
<b>CHAPTER 1. LITERATURE REVIEW.....</b>	<b>1</b>
<b>1.1 Introduction.....</b>	<b>2</b>
<b>1.2 Culture and Belief Systems .....</b>	<b>7</b>
1.2.1 Conceptual framework.....	8
1.2.2 Study rationale and theoretical framework .....	9
<b>1.3 Early Mother-Child Interaction Behaviours and Verbal Productivity .....</b>	<b>11</b>
1.3.1 Cultural differences: A general overview .....	17
<b>1.4 Cultural Differences in Reported Beliefs and Practices Related to Mother-Child Interactions .....</b>	<b>18</b>
1.4.1 Parenting and child-rearing practices .....	18
1.4.2 Views related to children’s language learning and interaction practices .....	24
1.4.3 Views on communication disabilities.....	33
<b>1.5 Observed Practices Related to Mother-Child Interactions.....</b>	<b>35</b>
1.5.1 Language-modelling utterances .....	36
1.5.1.1 <i>Type, definition and role</i> .....	37
1.5.1.2 <i>Cultural differences</i> .....	37
1.5.1.3 <i>Associations with children’s language skills</i> .....	40
1.5.2 Conversation-eliciting utterances .....	42
1.5.2.1 <i>Type, definition and role</i> .....	43
1.5.2.2 <i>Cultural differences</i> .....	43
1.5.2.3 <i>Associations with children’s language skills</i> .....	44
1.5.3 Directive utterances .....	44
1.5.3.1 <i>Type, definition and role</i> .....	45
1.5.3.2 <i>Cultural differences</i> .....	47
1.5.3.3 <i>Associations with children’s language skills</i> .....	50

1.5.4 Verbal productivity .....	52
1.5.4.1 Type, definition and role .....	52
1.5.4.2 Cultural differences .....	52
1.5.4.3 Associations with children's language skills .....	53
<b>1.6 Malaysia .....</b>	<b>55</b>
<b>1.7 New Zealand .....</b>	<b>61</b>
<b>1.8 Language Learning and Interaction Models .....</b>	<b>64</b>
1.8.1 Tuitional model in language learning .....	64
1.8.2 Intentionality model in language learning .....	64
1.8.3 Social interactionist model of language acquisition .....	65
1.8.4 Application of language learning and interaction models .....	66
<b>1.9 Working with Multicultural Populations .....</b>	<b>67</b>
1.9.1 Current challenges .....	67
1.9.2 Current SLT guidelines for implementing language-intervention programs .....	68
<b>1.10 Statement of the Problem .....</b>	<b>69</b>
<b>1.11 Thesis Aims and Research Questions .....</b>	<b>71</b>
1.11.1 Study One: Reported Beliefs and practices related to mother-child interactions among Malaysian and New Zealand mothers .....	71
1.11.2 Study Two: Observed mother-child interaction behaviours among Malaysian mothers .....	72
 <b>CHAPTER 2. STUDY ONE: REPORTED BELIEFS AND PRACTICES RELATED TO MOTHER-CHILD INTERACTIONS AMONG MALAYSIAN AND NEW ZEALAND MOTHERS .....</b>	
<b>2.1 Aims of the Present Study .....</b>	<b>74</b>
<b>2.2 Methods .....</b>	<b>74</b>
2.2.1 Ethical considerations .....	74
2.2.2 Research design .....	74
2.2.3 Instrumentation: Survey development .....	77
2.2.4 Participants .....	82
2.2.5 Procedure .....	92
<b>2.3 Inter-Rater Agreement .....</b>	<b>96</b>
<b>2.4 Data Analysis .....</b>	<b>98</b>
<b>2.5 Results .....</b>	<b>99</b>
2.5.1 Group Differences: New Zealand and Malaysian participants .....	99
2.5.1.1 Survey responses: Beliefs related to mother-child interaction .....	101
2.5.1.2 Survey responses: Practices related to parent-child interaction .....	102
2.5.2 Group Similarities: New Zealand and Malaysian participants .....	105

2.5.3 Subgroup Differences: Malaysian participants only.....	105
2.5.3.1 Survey responses: Beliefs related to parent-child interaction.....	107
2.5.3.2 Survey responses: Practices related to parent-child interaction.....	108
2.5.3.3 Key findings for beliefs and practices in Malaysian group .....	109
<b>2.6 Discussion.....</b>	<b>112</b>
2.6.1 Malaysian and New Zealand mothers' reported interaction patterns .....	114
2.6.1.1 Differences in beliefs and practices .....	115
2.6.1.2 Similarities in beliefs and practices .....	126
2.6.2 Malaysian mothers' reported interaction patterns .....	127
2.6.2.1 Differences in beliefs and practices .....	128
2.6.2.2 Similarities in beliefs and practices .....	132
<b>2.7 Conclusion .....</b>	<b>133</b>
 <b>CHAPTER 3. STUDY TWO: OBSERVED MOTHER-CHILD INTERACTION BEHAVIOURS AMONG MALAYSIAN MOTHERS.....</b>	 <b>134</b>
<b>3.1 Aims of the Present Study .....</b>	<b>135</b>
<b>3.2 Methods.....</b>	<b>135</b>
3.2.1 Ethical considerations .....	135
3.2.2 Participants .....	135
3.2.3 Procedure.....	142
3.2.3.1 Language transcription.....	144
3.2.3.2 Coding system .....	145
<b>3.3 Accuracy Rating and Reliability.....</b>	<b>150</b>
3.3.1 Transcription accuracy and reliability.....	150
3.3.2 Coding accuracy.....	153
<b>3.4 Language Sample Analysis.....</b>	<b>154</b>
3.4.1 Mothers' verbal productivity measures.....	154
3.4.2 Mothers' interaction behaviour measures .....	156
3.4.3 Statistical analysis .....	156
<b>3.5 Results.....</b>	<b>157</b>
3.5.1 Analysis of mothers' verbal productivity measures .....	158
3.5.2 Analysis of mothers' interaction behaviours .....	163
3.5.3 Analysis of children's verbal productivity measures.....	179
3.5.4 Correlation analysis between measures of mothers' and children's verbal productivity .....	181
3.5.5 Correlation analysis between measures of mothers' interaction behaviours and children's verbal productivity .....	182
<b>3.6 Discussion.....</b>	<b>187</b>

3.6.1 Comparison of Malaysian mother-child verbal interactions across three ethnicities.....	189
3.6.1.1 <i>Mothers' verbal productivity</i> .....	189
3.6.1.2 <i>Mothers' interaction behaviours</i> .....	193
3.6.2 Relationship between specific measures of mothers' verbal and interaction behaviours and children's verbal productivity .....	200
3.6.2.1 <i>Mothers' verbal productivity</i> .....	200
3.6.2.2 <i>Mothers' interaction behaviours</i> .....	203
<b>3.7 Conclusion .....</b>	<b>212</b>
 <b>CHAPTER 4. GENERAL DISCUSSION AND SUMMARY, CLINICAL IMPLICATION, LIMITATIONS AND FUTURE RESEARCH .....</b>	 <b>213</b>
<b>4.1 Introduction.....</b>	<b>214</b>
<b>4.2 General Discussion and Summary .....</b>	<b>216</b>
4.2.1 Study 1: Reported beliefs and practices related to mother-child interactions.....	216
4.2.2 Study 2a: Observed mother-child interactions among Malaysian mothers.....	220
4.2.3 Study 2b: Relationship between specific verbal interaction behaviours.....	224
<b>4.3 Clinical Implications.....</b>	<b>226</b>
<b>4.4 Recommended Guidelines to Navigate Cultural Belief Systems .....</b>	<b>230</b>
<b>4.5 Limitations .....</b>	<b>236</b>
<b>4.6 Directions for Future Research .....</b>	<b>242</b>
<b>4.7 Conclusion .....</b>	<b>243</b>
 <b>REFERENCES.....</b>	 <b>245</b>
 <b>APPENDICES</b>	
<b>Appendix A</b> Ethics approval letter.....	<b>262</b>
<b>Appendix B</b> Parent Questionnaire.....	<b>263</b>
<b>Appendix C</b> Mother and spouse/partner occupation categorized into four levels of the International Standard Classification of Occupations (International Labour Office, Geneva, 2012).....	<b>274</b>
<b>Appendix D</b> Survey Study 1 Cover letter for organizations .....	<b>277</b>
<b>Appendix E</b> Survey Study 1 Research leaflet.....	<b>279</b>
<b>Appendix F</b> Survey Study 1 Information sheet .....	<b>280</b>
<b>Appendix G</b> Survey Study 1 Confidentiality agreement for inter-rater task .....	<b>282</b>
<b>Appendix H</b> Training manual for Questionnaire data entry .....	<b>283</b>
<b>Appendix I</b> Study 2 Informed consent form .....	<b>292</b>
<b>Appendix J</b> Survey Study 2 Information sheet.....	<b>293</b>
<b>Appendix K</b> Standard SALT transcription conventions .....	<b>295</b>

# LIST OF TABLES

---

Table 1.1	Studies on caregiver-child interactions across cultural groups and settings.....	12
Table 2.1	Demographic data for mothers' characteristics as a percentage* of the group ...	85
Table 2.2	Demographic data for participants' child characteristics as a percentage* of the group .....	86
Table 2.3	The number and percentage of languages spoken by mothers .....	88
Table 2.4	The languages most frequently used by Malaysian mothers with their children as a percentage* and number within their ethnic group .....	89
Table 2.5	The total number of languages spoken by target child as a percentage within the cultural group .....	89
Table 2.6	The languages most frequently heard by Malaysian mothers' target child .....	90
Table 2.7	Demographic data for participants' family characteristics as a percentage* of the group .....	92
Table 2.8	The total number of participants who received and completed survey and response rate.....	95
Table 2.9	Number and percent of correct agreements for inter-rater agreement.....	97
Table 2.10	Effect sizes for Cramer's $v$ and $\phi$ values (Cohen 1988).....	99
Table 2.11	Percentage of Malaysian and New Zealand mothers strongly agreed or agreed with the belief statements related to mother-child interactions .....	100
Table 2.12	Percentage of Malaysian and New Zealand (NZ) mothers reported almost always or very often with the practice statements .....	104
Table 2.13	Percentage of Malaysian mothers strongly agreed or agreed with the belief statements related to mother-child interactions .....	106
Table 2.14	Percentage of Malaysian mothers reported almost always or very often with the practice statements .....	111
Table 2.15	Summary of belief items that yielded large significant differences between Malaysian and New Zealand group .....	113
Table 2.16	Summary of practice items that yielded small, moderate and large significant differences between Malaysian and New Zealand group .....	113

Table 3.1	Means and standard deviations for mothers' age across groups.....	137
Table 3.2	Demographic data on Malaysian mothers' characteristics as a percentage* of the group .....	139
Table 3.3	Demographic data on children's characteristics as a percentage* of the group..	141
Table 3.4	Demographic data on family characteristics as a percentage* of the group.....	142
Table 3.5	Definition and examples of interaction behaviours used in the study .....	146
Table 3.6	Transcription accuracy units as a percentage for five language samples .....	152
Table 3.7	Variables that measure verbal productivity .....	155
Table 3.8	Means and standard deviations for mothers' verbal productivity measures across group .....	159
Table 3.9	Test of homogeneity of variances for mothers' verbal productivity measures...	160
Table 3.10	Means and standard deviations for mothers' interaction behaviours across group .....	164
Table 3.11	Means and standard deviations for mothers' conversational dominance across group .....	165
Table 3.12	Test of homogeneity of variances for mothers' interaction behaviour measures.....	166
Table 3.13	Mothers' interaction behaviours in five categories expressed as a total mean percentage across group .....	176
Table 3.14	Summary of statistically significant group difference for measures of verbal productivity, interaction behaviours, conversational dominance and mean turn length in Malaysian mothers .....	177
Table 3.15	Means and standard deviations for children's verbal productivity measures across group .....	180
Table 3.16	Relationship between mothers' and children's verbal productivity measures (N=48).....	181
Table 3.17	Relationship between mothers' interaction behaviours and children's verbal productivity measures .....	185
Table 3.18	Summary of the correlation results between mothers' twenty-seven interaction behaviours and children's verbal productivity measures expressed in r value..	186

# LIST OF FIGURES

---

Figure 1.1	The “Onion Diagram”: Cultural levels and the depth (Hofstede, 2001) .....	8
Figure 1.2	The Ecological Systems Model (Bronfenbrenner, 1986) .....	9
Figure 1.3	Map of Malaysia.....	56
Figure 1.4	Map of New Zealand .....	63
Figure 3.1	Variables that measure mothers’ interaction behaviours.....	157
Figure 3.2	Mean values for speech rate by mothers across groups .....	161
Figure 3.3	Mean values for talkativeness for mothers across groups .....	161
Figure 3.4	Mean values for vocabulary diversity for mothers across groups .....	162
Figure 3.5	Mean values for sentence length for mothers across groups .....	163
Figure 3.6	Frequency for behaviour control utterances across groups .....	167
Figure 3.7	Frequency for response control utterances across groups .....	169
Figure 3.8	Frequency for conversation-eliciting utterances across group .....	170
Figure 3.9	Frequency for language-modelling utterances across groups .....	172
Figure 3.10	Frequency for other utterances across groups .....	174
Figure 3.11	Frequency for conversational dominance and mean turn length across groups .....	175
Figure 3.12	Correlation between mothers’ and children’s verbal productivity measures as displayed in a scatterplot.....	182





# CHAPTER ONE

---

## Literature Review

## 1.1 INTRODUCTION

Early caregiver-child interactions provide a foundation from which children develop language, cognition, and social-emotional competence (Bruner, 1981; Guralnick & Neville, 1997; MacDonald & Carroll, 1992; Roberts & Kaiser, 2011; Rollins, 2003). However, caregiver-child interactions are not uniform and differ for a variety of reasons. One factor, cultural differences, has been shown to influence caregiver-child interaction (Crago, 1992; Rogoff, 2003). Two groups in which this has been shown has been with Western Caucasian and Asian mothers. *Western Caucasian* used in this thesis refers to white, native English-speaking mothers living in Canada, North America and Britain. *Asian* refers to mothers who are primarily non-white, non-native English speakers, and have roots in Asia (e.g., India, China, Taiwan, Korea, Vietnam, or Philippines, etc.) but may not necessarily live in these countries. Studies across Western Caucasian and Asian cultures reveal that not only do parent-child interactions mirror cultural belief systems (Crago, 1992; Rogoff, 2003), but there are also distinct patterns of interaction across cultures (Bornstein et al., 1992; Cheah & Rubin, 2003; Hwa-Froelich & Westby, 2003; Jose, Huntsinger, Huntsinger & Liaw, 2000; Roberts & Kaiser, 2011; Rogoff, 2003; van Kleeck, 1994; Vigil, 2002).

For instance, several groups of Asian mothers (i.e., Chinese, Indian, Korean, Filipino) were reported to use a more adult-centred ‘directive’ or instructional interaction pattern with their children, whereas Western Caucasian mothers used a more child-centred ‘facilitative’ interaction pattern (e.g., Johnston & Wong, 2002; McCollum, Ree, & Chen, 2000; Santos & McCollum, 2007; Simmons & Johnston, 2007). The Asian mothers in these studies were reported to believe that children learnt best from adults’ experiences and interests, as the inherent perception is that young children are unable to learn on their own and are dependent on adults to teach them. Markus and Kitayama (1991) suggested this was a reflection of the Asian ideology of family interdependence. In addition, it was believed that the primary

purpose of mother-child interactions is to teach object names and functions and to test this knowledge. In contrast, Western Caucasian mothers believed that children learn best from their own experiences and interests, and need to be independent as early as possible, thus reflecting the Western ideology of individual independence. Here, mothers actively engage children in play partnerships and adopt interaction behaviours that expand their children's utterances. In other words, Asian mothers appear to be using a tuitional model (Lasky & Klopp, 1982) for language learning, that is, direct modelling. Western Caucasian mothers seem to adopt an intentionality language learning model (Bloom, Tinker, & Scholnick, 2001) and the social interactionist model (Bohannon & Bonvillian, 1997), where the child is seen as the driving force for language learning.

The type of interaction behaviours that mothers use with their children has been a subject of interest for Speech-Language Therapists (SLTs) who work with children with communication and language difficulties. The reason is that specific interaction behaviours, believed to optimize language and communication skills in children, have been identified and established in several language intervention programs. These programs, largely drawn from the Western Caucasian populations, include the Hanen Program's It Takes Two to Talk (Manolson, 1992; Pepper & Weitzman, 2004), Enhanced Milieu Teaching (Hemmeter & Kaiser, 1994; Kaiser & Hancock, 2003), and the Transactional Intervention Program (TRIP) (Mahoney & Powell, 1988). A core feature of these programs is the training of parents or other non-SLTs to use child-centred 'facilitative' interaction patterns to stimulate children's language and communication development. A range of research studies shows there are strong positive correlations between mothers' use of these interaction patterns and their children's language measures, in children with and without language difficulties (e.g., Girolametto, Weitzman, Wiigs & Pearce, 1999; Hirsh-Pasek, et al., 2015; van Balkom, Verhoeven, & van Weerdenburg, 2010). However, a directive/instructional interaction pattern

has been associated with poorer outcomes in language, learning and interaction skills in both typically-developing and at-risk children (Cress, Moskal & Hoffmann, 2008; MacDonald & Carroll, 1992), although Burns and Radford (2008) argued that there is no direct evidence of this. The language intervention models cited appear to be in direct contrast with the interaction beliefs and style reported by Asian mothers with their children. Thus it is important to increase understanding of communication behaviours and interaction across cultures in order to understand the context in which such intervention is provided.

This thesis is motivated by a) evidence in the literature that cautions against the use of culturally specific evidence-based language-intervention programs with children and families from different cultural backgrounds (e.g., Hwa-Froelich & Westby, 2003; van Kleeck, 1994), and b) the challenges in implementing these language intervention programs with individuals from non-Western cultures who use different interaction patterns. Given that diversity exists both across and within cultures, how does one apply evidence-based language-intervention programs with multicultural populations that have different interaction patterns? A substantial quantity of published literature to date is biased towards participants who are of Western Caucasian heritage, living in English-speaking countries. Studies of Asian populations are sparse and are largely focused on migrant populations in Western countries. For example, Johnston and Wong (2002) examined mother-child interactions among Chinese and Euro-Canadian mothers residing in Canada and Simmons and Johnston (2007) undertook a similar study with an Indian population in Canada.

Currently, there is no published empirical study on the specific beliefs and practices related to mother-child interaction in Malaysia, a multicultural nation, whose people predominantly identify themselves through ethnicity and appear to have retained their individual ethnic cultural values. Although a recent publication explored Malaysian parents' belief systems and family roles (Hossain, 2014), this review centred on child-rearing and

parenting practices from a socio-cultural perspective. While there has been some literature on speech-language development in Malaysia, there has been little focus on parent-child interaction specifically. Existing publications to date have focused on

1. phonological development (Phoon, Maclagan & Abdullah, 2015; Thomas Joseph, 2006)
2. language profiles and language sample measures (Low, Nicholas & Wales, 2010; Ooi & Wong, 2012)
3. family-centred practices and intervention related to children with developmental disabilities, hearing impairment and autism (Lee & Lee, 2015; Othman, 2010; Singh, Iacono & Gray, 2011)
4. service delivery and clinical education (Ahmad, Ibrahim, Othman, & Vong, 2013; Lian & Abdullah, 2001; Santiago & Stansfield, 1998; Van Dort, 2005), and
5. beliefs about general parental roles in families, childcare involvement and preschool education (Hewitt & Maloney, 2010; Hossain, 2014; Hossain, Roopnarine, Masud, Muhamaad, Baharudin, Abdullah & Juhari, 2005).

Apart from related studies in Malaysia, studies on the beliefs and practices related to mother-child interaction patterns in New Zealand are limited. Existing research has focused on teacher beliefs and practices related to literacy and teaching (e.g., Foote, Smith, & Ellis, 2004; McNeill & Kirk, 2014), and cross-cultural studies (European and Māori) of mother-child interactions (Podmore & St. George 1986) and infant care practices (Abel, Park, Tipene-Leach, Finau & Lennan 2001). The aims of the thesis are to

1. discover the beliefs and practices related to mother-child interaction in Malaysia and New Zealand
2. examine associations between mothers' specific verbal interaction patterns and children's language measures.

The study findings are expected to contribute to the understanding of maternal interaction behaviours across cultures in order to assist SLTs to implement language intervention programs with multicultural populations. As such, arising from the findings of the thesis, recommended guidelines to navigate belief systems when implementing language intervention programs with diverse families will be proposed. Further to this, the findings are expected to build a basis for future studies that examine mothers' interactions with atypically-developing children.

The thesis is organized into five chapters. In Chapter One, the rationale for examining parent-child interaction behaviours within a theoretical framework is considered. Relevant definitions and studies pertaining to cultural belief systems, cross-cultural mother-child interaction behaviours and verbal productivity is explored with a description of the language and interaction models used in language intervention programs. Following this, a brief section on the challenges faced by SLTs working with multicultural populations, particularly in New Zealand and Malaysia, are briefly discussed with current recommended guidelines. The gaps in research are identified, and the thesis aims and research questions are stated. In Chapter Two, a study of the differences in beliefs and practices related to mother-child interactions among mothers in New Zealand and Malaysia, are presented and discussed. Chapter Three narrows the focus and presents a study that directly observes parent-child interaction practices among Malaysian mothers. Chapter Four summarizes key findings and these are discussed in light of an ecological model and the relevant theoretical language learning models. This chapter outlines the clinical implications and proposes a recommended guideline to navigate belief systems. In addition, study limitations and directions for future research are explored with a concluding statement.

## 1.2 CULTURE AND BELIEF SYSTEMS

The term *culture* has a variety of definitions (e.g., Facchini & Melki, 2011; Hofstede, 2001; Matsumoto & Yoo, 2006; Weiss, Kreider, Lopez, & Chatman, 2005). These definitions suggest that belief systems and culture are intricately interwoven. In essence, these authors viewed culture as a shared value or belief system, embraced by a particular community, from which stems particular patterns of behaviour that shape their everyday interactions, living and viewpoints. These behaviours collectively reflect their group or community membership, and historical alliances, and are imparted to the next generation in words, actions and possessions as a cultural heritage.

Culture has attracted the interest of researchers from an array of different fields, which includes, but is not limited to, anthropology/sociology, biology, and psychology, and with reference to arts, music, human body cells and human behaviours, etc. (Hofstede, 2001; Pampaloni, Reynaud & Stelzer, 2007; Markus and Kitayama, 1991; Triandis & Brislin, 1984; Triandis, 2000). The study of culture aims to discover and understand how life is lived in order to develop meaningful interactions. Similar to bacteria, human behaviours grow and change in different cultured environments. There are a number of ways to examine culture, within the context of human behaviours. One important way is through examining belief systems. Beliefs or value systems represent the nucleus of a given culture. Hofstede (2001) likened the nested elements of visible behaviours associated with culture to an onion. The core of the layered onion consists of values (the “core of the culture”). The other layers are symbols (objects, words or gestures with specific meanings within a society), heroes (persons who are highly esteemed within the society) and rituals (activities that are significant and essential within the society). All these layers are incorporated under the term ‘practices’ as seen in Figure 1.1. Hofstede added that while the visible practices of a given culture are

observable, the cultural meaning of these practices remains invisible and significant to that specific individual or cultural group.

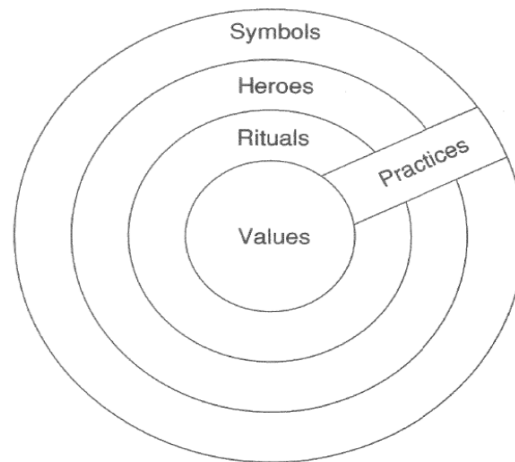


Figure1.1 the “Onion Diagram”: Cultural levels and the depth (Hofstede, 2001)

### 1.2.1 Conceptual framework

Triandis (2000) outlined three non-exclusive ways in which different cultures can be examined: a) indigenously (where specific words, groups or concepts are described in terms of what they mean and how they change within the culture), b) culturally (where samples are gathered ethnographically) and c) cross-culturally. The thesis adopted a cross-cultural approach: that is, a study that obtains information from individuals of two or more cultures, to examine the beliefs and practices related to parent-child interactions (Triandis, 2000). The focus is on cross-cultural comparisons of specific constructs or behaviours (delineated within the study), in order to understand the similarities and differences across cultures (Aneas & Sandin, 2009). Specifically, Triandis and Brislin (1984) termed this particular approach of studying culture as a ‘relativist’ (examining differences in cultural groups) and ‘universalist’ (identifying similarities) point of view. The emphasis is not on emics (the study of aspects that are culture-specific by employing qualitative, ethnographic methods) but on etics. The latter uses quantitative or/and mixed methods to contrast the findings within the study and



with other related research (Aneas & Sandin, 2009; Triandis & Brislin, 1984). Using mixed-methods, the focus of the thesis is on cross-cultural comparison of specific belief constructs and mother-child interaction behaviours among a sample of mothers in Malaysia and New Zealand, in order to increase understanding across cultural groups, and foster meaningful interactions.

### 1.2.2 Study rationale and theoretical framework

The study of parents' belief systems, that is, their values, ideas, perception and attitudes, in parent-child interactions is crucial to understand parents' practices with their children (Bornstein & Cheah, 2006). The study of belief systems adopted in this thesis is based on Bronfenbrenner's Ecological Systems Model (Bronfenbrenner, 1986). The model affirms the important role of cultural beliefs and ideologies at the macrosystems level that functions as an environmental layer through which all other patterns of behaviour are organized, or filtered within the individual's environment. The model identifies four environmental levels that influence the child's overall development, as shown in Figure 1.2.

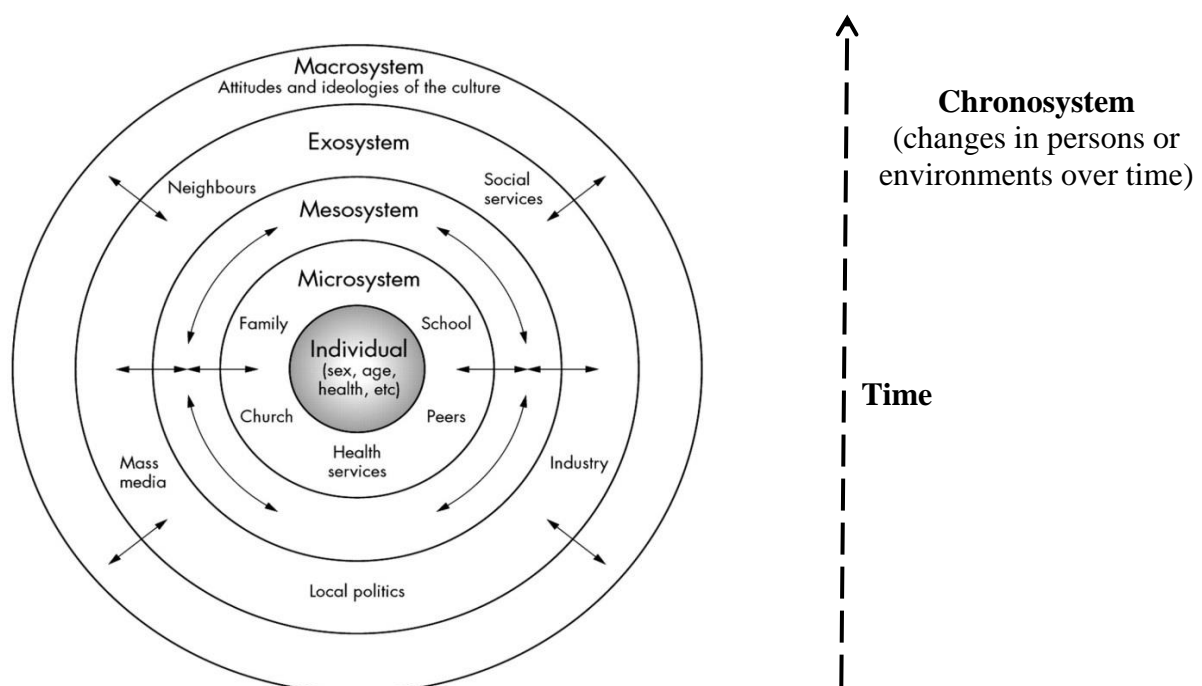


Figure 1.2. The Ecological Systems Model (Bronfenbrenner, 1986)

The model begins with the environmental structure that is most direct and closest to the child, that is, the microsystem level. The subsequent outer layers include the mesosystem level, the exosystem level and the macrosystem level. Cultural beliefs and ideologies form the outer layer (the macrosystem level). Although cultural beliefs and ideologies of the culture have no direct effect on the child, they have an influential, cascading impact across all the other levels. For example, at the macrosystem, if the inherent belief in the culture is that “talking to young children is not important as they do not have the capacity to actively learn until they are 4 years old”, this belief will then define how parents will function or organize the environment for their children. At the exosystems level, the stress, schedules, norms, etc., within the parent’s workplace, social group, community and nation, may be organized in a way that endorses this belief, hence indirectly affecting the child concerned. Further in, at the mesosystems level, the parent-child interaction experiences and connections within the school, religious settings, and so forth will be limited because of this inherent belief. At the microsystems level, this inherent belief may result in limited opportunities for the child to interact with individuals directly related to him or her, for example, parents and family members. In addition, Bronfenbrenner (1986) explained the chronosystem which accounts for and examines the changes across time that happen as the individual grows in chronological age, and for the major changes in his or her environment as the individual grows (e.g., divorce or death of family members). Evidently, cultural belief and ideologies exert an influential role that affects the individual’s environment, thus substantiating the study rationale.

The Ecological Model illustrated the cascading influence of cultural beliefs and ideologies on mother-child interactions. The next section will outline the importance of verbal interaction behaviours and provide a general overview of cultural differences in interactions.

### **1.3 EARLY MOTHER-CHILD INTERACTION BEHAVIOURS AND VERBAL PRODUCTIVITY**

In every culture, caregiver-child interaction takes place in multiple settings, activities and environments, and serves as a catalyst to foster meaningful connections between the individuals. These interpersonal connections enable the child to learn communication and interaction skills (Roberts & Kaiser, 2011; MacDonald & Carroll, 1992). Early caregiver-child interactions have been investigated in various ways (see Table 1.1). These include aspects related to these factors

1. Settings. The caregiver-child pairs have been observed at home, in a laboratory or clinical environment, and at playschool or playroom.
2. Activities. The dyads (in the different studies) engaged in a variety task that included meal-time routines, free-play, story/book reading, or a particular structured task.
3. Caregiver relationship and role. The child's individual interactions with different caregivers, for example, mother, father or teacher have been examined.
4. Specific measures of interaction, communication, language and verbal productivity. This, among others, includes initiations, joint attention, turn-taking, recasts or expansions, responsiveness, conversational dominance, sentence length, vocabulary (size and diversity), and talkativeness.

Table 1.1 *Studies on caregiver-child interactions across cultural groups and settings*

Authors	Cultural groups	Location	Languages	Participants	Settings & Activities	Measures & Analysis
Bornstein, Toda, Azuma, Tamis-LeMonda and Ogino (1990)	<ul style="list-style-type: none"> <li>• Japanese</li> <li>• American Caucasians</li> </ul>	Tokyo; New York	Japanese & English	48 M-C <sup>1</sup> dyads C <sup>2</sup> : 5 months old (mo), TD <sup>3</sup>	<ul style="list-style-type: none"> <li>• Home observation</li> <li>• 5 infant activities, 4 maternal activities; 1 joint activity</li> </ul>	<ul style="list-style-type: none"> <li>• Maternal responsiveness &amp; maternal control of infant's attention focus;</li> <li>• frequency and proportion duration for each activity</li> </ul>
Burns and Radford (2008)	<ul style="list-style-type: none"> <li>• Nigerian</li> </ul>	London	English	3 M-C dyads C: 22-40 mo, TD	<ul style="list-style-type: none"> <li>• Home observation</li> <li>• 15-20 min free-play with own toys</li> </ul>	<ul style="list-style-type: none"> <li>• Conversational &amp; Qualitative analysis of M-C transcripts</li> </ul>
Cheah and Rubin (2003)	<ul style="list-style-type: none"> <li>• European American (<math>n=103</math>)</li> <li>• Chinese (<math>n=100</math>)</li> </ul>	Washington DC; Beijing	English & Mandarin	203 M-C dyads; C: 30-60 mo, TD	<ul style="list-style-type: none"> <li>• Questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>• Beliefs: 3 categories of social skills (sharing, controlling negative emotions &amp; helping);</li> <li>• 5 Likert scale, open-ended questions</li> </ul>
Cheah, Leung, Tahseen and Schultz (2009)	<ul style="list-style-type: none"> <li>• Chinese (from mainland China)</li> <li>• Taiwanese</li> <li>• Hong Kong</li> </ul>	United States	Mandarin, Cantonese or English	85 mothers with preschool children (mean age= 4.23 years); TD	<ul style="list-style-type: none"> <li>• Questionnaire administered at Home</li> </ul>	<ul style="list-style-type: none"> <li>• 5 different questionnaires/Scales</li> </ul>
Chen and McCollum (2000)	<ul style="list-style-type: none"> <li>• Taiwanese (<math>n=16</math>)</li> </ul>	Taiwan	Taiwanese & Mandarin	16 mothers of children with Down Syndrome; C: 7-16 mo	<ul style="list-style-type: none"> <li>• Home; 1 hr Interview</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative procedures</li> <li>• 2 themes: developmental benefits (6 categories) and parental role (7 categories) in parent-child interactions</li> </ul>
Crago (1990)	<ul style="list-style-type: none"> <li>• Inuit (Quaqtaq and Kangirsuk communities)</li> </ul>	Canada	Inuktitut	4 children their families C: 12-24 mo; TD	<ul style="list-style-type: none"> <li>• 80 hrs observation of children &amp; families</li> <li>• 20 hrs ethnographic interviews with women over 2-years</li> </ul>	<ul style="list-style-type: none"> <li>• Transcription of observations and interviews, themes, qualitative; verbal and non-verbal behaviours</li> </ul>
Cristofaro and Tamis-LeMonda (2012)	<ul style="list-style-type: none"> <li>• African America (<math>n=47</math>)</li> <li>• Latino (<math>n=19</math>)</li> <li>• Caucasian or mixed ethnicity (<math>n=9</math>);</li> </ul>	United States	English	75 M-C dyads C: 36 mo (Time 1), 60 mo (Time 2); TD	<ul style="list-style-type: none"> <li>• Time 1- Home, 10 min semi-structured play session</li> <li>• Time 2-Kindergarten 2-min personal narrative &amp; tests</li> </ul>	<ul style="list-style-type: none"> <li>• M-C interaction transcribed with CHAT<sup>5</sup> &amp; analysed with CHILDES<sup>6</sup></li> <li>• Mothers' utterances (lexical diversity, interrogatives, prompts, statements);</li> <li>• Narratives coded, Tests scored</li> </ul>

Hammer and Weiss (2000)	<ul style="list-style-type: none"> <li>• African-American</li> </ul>	United States (urban setting in the South)	English	12 M-C dyads with 13-18 mo; TD; low & middle SES group	<ul style="list-style-type: none"> <li>• SLT Clinic</li> <li>• Semi-structured interviews over 2-3 sessions (1-4 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Views on a) how children learned to talk, b) perceptions and fostering of children's language development;</li> <li>• Qualitative theme analysis</li> </ul>
Harwood, Schoelmerich, Schulze and Gonzalez (1999)	<ul style="list-style-type: none"> <li>• Anglo (American who were of non-Hispanic European ancestry) (<i>n</i>=22)</li> <li>• Puerto-Rican (<i>n</i>=18)</li> </ul>	Connecticut; San Juan, Puerto Rico	English & Spanish	40 M-C dyads C: 12-15 months; TD	<ul style="list-style-type: none"> <li>• Home;</li> <li>• Session 1: VT observation of mother &amp; child interaction in four everyday settings;</li> <li>• Session 2: interview with mother on her "long term socialization goals and child-rearing beliefs" (1.5 hours each session)</li> </ul>	<ul style="list-style-type: none"> <li>• Session 1: M-C Interactions- coded frequency of maternal verbal, maternal non-verbal and infant behaviours across four settings (feeding, social play, teaching and free play);</li> <li>• Session 2: Semi structured questionnaire &amp; open-ended interview;</li> <li>• Analysis: a) socialization goals (coded in 6 mutually exclusive categories; b) child-rearing beliefs (in 7 categories)</li> </ul>
Howes, Guerra and Zucker (2007)	<ul style="list-style-type: none"> <li>• Mexican heritage</li> </ul>	United States	Spanish & English	125 mothers; children part of Early Head Start Research Project	<ul style="list-style-type: none"> <li>• Home, kindergarten;</li> <li>• Ethnographic/natural istic observation, interviews (VT);</li> <li>• M-C interactions from child's birth to 7years old.</li> </ul>	<ul style="list-style-type: none"> <li>• Standardized assessment (national protocol) and standard interviews;</li> <li>• Analysed using triangulation, transcription of interviews and coded using grounded theory; latent class analysis</li> </ul>
Johnston and Wong (2002)	<ul style="list-style-type: none"> <li>• Western (<i>n</i>=44)</li> <li>• Chinese (<i>n</i>=42)</li> </ul>	Canada	Chinese and English	86 mothers with children between 2 and 4 years old	<ul style="list-style-type: none"> <li>• Questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>• Measured beliefs and practices related to parent-child interactions;</li> <li>• Beliefs: 20 statements using 5-point agreement Likert scale;</li> <li>• Practice: 12 statements: 4-frequency scales (Almost Always, Very Often, Sometimes &amp;Hardly Ever)</li> </ul>
Jonk and Enns, (2009)	<ul style="list-style-type: none"> <li>• Dene (<i>n</i>=30)</li> <li>• Non-Aboriginal (<i>n</i>=30)</li> </ul>	Manitoba & Winnipeg	Dene & English	60 mothers with children 2-6years old;	<ul style="list-style-type: none"> <li>• Survey &amp; face-to-face interview</li> </ul>	<ul style="list-style-type: none"> <li>• Language acquisition beliefs</li> <li>• Practices that aid children's language learning process</li> </ul>

Jose, Huntsinger, Huntsinger and Liaw (2000)	<ul style="list-style-type: none"> <li>• European American (<math>n=40</math>)</li> <li>• Chinese American (<math>n=40</math>)</li> <li>• Taiwanese Chinese (<math>n=40</math>)</li> </ul>	Chicago & Taipei	English & Chinese	120 couples and their children (mean age range was 5.60 – 5.67 years)	<ul style="list-style-type: none"> <li>• Questionnaire &amp; Interviews on child rearing practices;</li> <li>• Parents &amp; children VT teaching child ‘a counting game’</li> </ul>	<ul style="list-style-type: none"> <li>• Parent values and goals using 2 questionnaire</li> <li>• Coded parenting behaviours: directiveness &amp; warmth</li> <li>• Coded child behaviours: quiet-control, warmth &amp; self-reliance</li> </ul>
McCollum, Ree and Chen (2000)	<ul style="list-style-type: none"> <li>• American (<math>n=3</math>)</li> <li>• Korean (<math>n=3</math>)</li> </ul>	United States	English	6 M-C dyads C: 12 mo	<ul style="list-style-type: none"> <li>• Home</li> <li>• Structured open-ended interview (1-1.5 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Transcribed interview using qualitative methods;</li> <li>• 2 themes: developmental benefits &amp; parenting roles</li> </ul>
Richman, Miller and LeVine (1992)	<ul style="list-style-type: none"> <li>• Rural Gusii (<math>n=28</math>)</li> <li>• American (<math>n=20</math>)</li> </ul>	Kenya & Boston	Gusii & English	48 M-C dyads; C: 3-4 mo (Time 1) 9-10 mo (T2); TD	<ul style="list-style-type: none"> <li>• Naturalistic Home observations for 1 hour every 3 months</li> </ul>	<ul style="list-style-type: none"> <li>• 47 codes each for infant behaviour &amp; caregiver behaviour at 1-min interval (Gusii) and 5-sec (America)</li> </ul>
Rodríguez, Hines and Montiel (2009)	<ul style="list-style-type: none"> <li>• Mexican American</li> </ul>	United States (south-western region)	English	20 M-C dyads; C: 24-36 mo low & middle SES group; TD	<ul style="list-style-type: none"> <li>• Home Observation</li> <li>• Two book reading sessions, VT</li> </ul>	<ul style="list-style-type: none"> <li>• 12 Communication behaviour categories</li> <li>• Coded and Analysed using Adult/Child Interactive Reading Inventory &amp; transcribed with SALT</li> </ul>
Rodriguez and Olswang (2003)	<ul style="list-style-type: none"> <li>• Mexican-American (<math>n=30</math>)</li> <li>• Anglo-American (<math>n=30</math>)</li> </ul>	United States (south-western region)	Spanish & English	60 M-C dyads; C: 7-8years old with speech-language impairment	<ul style="list-style-type: none"> <li>• Questionnaire: a) Parental Modernity Scale b) Rank Order of Parental Values</li> <li>• Interview</li> </ul>	<ul style="list-style-type: none"> <li>• Scale: 30 item Likert Scale (5-point)</li> <li>• Values: 15 items ranked 1-5</li> <li>• Qualitative analysis for interview</li> <li>• Quantitative analysis</li> </ul>
Santos and McCollum (2007)	<ul style="list-style-type: none"> <li>• Filipino (<math>n=28</math>)</li> </ul>	Manila Metropolitan	Tagalog	28 M-C dyads C: 10-26 mo; with & without disabilities	<ul style="list-style-type: none"> <li>• Choice of Home, work place or school</li> <li>• 1 hr open-ended interview</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative-analysed in three themes to compare two groups of children, that is, mothers’ actions with infants, her ideas &amp; interaction context.</li> </ul>
Simmons and Johnston (2007)	<ul style="list-style-type: none"> <li>• Euro-Canadian (<math>n=51</math>)</li> <li>• Indian (<math>n=47</math>)</li> </ul>	Canada	English Punjabi & Hindi	98 mothers with children between 2 and 4 years old	<ul style="list-style-type: none"> <li>• Questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>• Measured beliefs and practices related to parent-child interactions</li> <li>• Beliefs: 24 statements using 5-point agreement Likert scale</li> <li>• Practice: 12 statements: 4-frequency scales (Almost Always, Very Often, Sometimes &amp; Hardly Ever)</li> </ul>

Tamis-LeMonda, Baumwell and Cristofaro (2012)	<u>Mothers</u> <ul style="list-style-type: none"> <li>• African-American (<math>n=24</math>)</li> <li>• Latino (<math>n=26</math>)</li> </ul> <u>Fathers</u> <ul style="list-style-type: none"> <li>• African American (<math>n=25</math>)</li> <li>• Latino (<math>n=23</math>)</li> <li>• Pacific Islander (<math>n=1</math>)</li> <li>• Caucasian (<math>n=1</math>)</li> </ul>	United States	Spanish & English	Mothers & Fathers and their children who were visited at their 14, 24 and 36 months of age; TD	<ul style="list-style-type: none"> <li>• Separate home visits that included one parent and child dyad at a time, VT</li> <li>• Interview and semi-structured play session, VT</li> </ul>	<ul style="list-style-type: none"> <li>• Demographic data, language samples that were transcribed according to CHAT convention and coded and analysed according to i) communication diversity, ii) word types and (iii) MLU.</li> </ul>
Vigil (2002)	<ul style="list-style-type: none"> <li>• Chinese (<math>n=5</math>)</li> <li>• British (<math>n=5</math>)</li> </ul>	England (North East)	Mandarin/ Cantonese & English	10 caretakers and child dyads; C: 5 mo (Time 1); 9, 12, 18 mo (Time 2, 3, 4); TD.	<ul style="list-style-type: none"> <li>• Home Observation</li> <li>• Average Play Interaction time: 9mo (12 min) and 12mo (20min); VT</li> </ul>	<ul style="list-style-type: none"> <li>• Mother utterances &amp; infant vocalizations coded for frequency</li> <li>• Mother utterances coded and analysed for a) attention regulation behaviours, b) object manipulation, c) pragmatic input</li> <li>• Infant vocabulary analysed using MacArthur CDI<sup>7</sup> (Chinese and English version)</li> </ul>

Note:

<sup>1</sup>M-C = mother-child; <sup>2</sup>C = Child; TD<sup>3</sup> = Typically -Developing; VT<sup>4</sup> = Videotaped; <sup>5</sup>CHAT = Codes for the Analysis of Human Language;

<sup>6</sup>CHILDES = Child Language Data Exchange System; <sup>7</sup>CDI = Communicative Development Inventory.

Studies involving parent-child interactions have been conducted with children with varying developmental skills. These include children who have: normally-developing language skills (e.g., Cristofaro & Tamis-LeMonda, 2012; Lasky & Klopp, 1982); known language and communication difficulties (e.g., Childress, 2011; Cress, et al., 2008; Rodriguez & Olswang, 2003; Chen & McCollum, 2000); and those from diverse language environments, that is, in terms of number and type of languages spoken (Tamis-LeMonda, Baumwell & Cristofaro, 2012; Chen & McCollum, 2000).

The motivating factors for the growing body of research related to parent-child interaction seem to include the need to discover, describe, compare, replicate, change, or propose new mother-child interaction behaviours that influence and support the child's language and communication development (Cleave, Becker, Curran & Van Horne, 2015; Conti-Ramsden, 1990; Hoff & Tian, 2005; Huttenlocher, Vasilyeva, Cymerman & Levine, 2002; Pancsofar & Vernon-Feagans, 2006). In addition, studies of parent-child interaction behaviours have been conducted to validate existing evidence-based language intervention programs or to develop new programs (Gridley, Hutchings, & Baker-Henningham, 2015; Hemmeter & Kaiser, 1994; Kaiser & Hancock, 2003; Roberts & Kaiser, 2012; Roberts & Kaiser, 2011; Snyder et al., 2015).

Early patterns of parent-child interaction are heterogeneous and influenced by a variety of factors, including (i) parents' biological and personality traits (e.g., gender, age, education, etc.), (ii) children's characteristics (e.g., age, language and communication developmental skills, etc.), and (iii) environmental influences (e.g., family dynamics, social, economic status and cultural backgrounds) (Bornstein, 2002a; Bornstein & Cheah, 2006). In order to understand the influence of cultural backgrounds, a summary of the various differences in parent-child interactions studies across cultures are outlined in the next sections.



### **1.3.1 Cultural differences: A general overview**

Communication and culture are intricately connected, as illustrated by Bronfenbrenner's model. Culture, at the macro-systems level, influences and shapes mother-child interactions at the micro-systems level (e.g., Bornstein, 1989; Bornstein & Cheah, 2006; Crago, 1992; Harkness & Super, 2006; Rogoff, 2003; Rogoff et al., 1993; Schieffelin & Ochs, 1986).

The literature has documented mother-child interactions in various cultural groups. They include (but are not limited to) Hispanic/Mexican American, African-American, Mayan Indian, Canadian First Nations, Nigerian, Turkish, Indian, Chinese (Mainland China, Hong Kong, Taiwan), Vietnamese, Filipino, Korean, Japanese, Māori and various American or European Caucasian communities living in various countries (Bornstein, 1989; Bornstein et al., 1992; Bornstein et al., 1990; Burns & Radford, 2008; Cristofaro & Tamis-LeMonda, 2012; Johnston & Wong, 2002; Jonk & Enns, 2009; Jose et al., 2000; McCollum et al., 2000; Podmore & St. George, 1986; Rodríguez et al., 2009; Rogoff et al., 1993; Santos & McCollum, 2007; Simmons & Johnston, 2007). These studies examined beliefs and practices related to parent-child interactions using surveys, interviews, or direct observation, primarily with mothers. These studies (see Table 1.1) have provided information on mothers' beliefs and interaction practices with children at different developmental ages. A summary of the main findings in terms of the specific reported beliefs and practices, and observed in mother-child interactions across different cultural groups are reported in the subsequent sections.

## **1.4 CULTURAL DIFFERENCES IN REPORTED BELIEFS AND PRACTICES RELATED TO MOTHER-CHILD INTERACTIONS**

In general, parents' ideologies and belief systems related to parent-child interactions have been examined in research studies in terms of

1. mothers' parenting and child-rearing practices (e.g., Howes, et al., 2007; Rogoff et al, 1993),
2. mothers' views related to beliefs in language learning and interaction practices (for example, children's language acquisition and learning environment, parental expectations of language competence, role, interaction and communication patterns with children) (Crago, 1992; Hammer & Weiss, 2000; Hoff & Tian, 2005; Johnston & Wong, 2002; Jonk & Enns, 2009; McCollum et al., 2000; Santos & McCollum, 2007; Simmons & Johnston, 2007), and
3. mothers' views on communication disabilities and their role in language intervention programs (Chen & McCollum, 2000; Kummerer & Lopez-Reyna, 2006).

### **1.4.1 Parenting and child-rearing practices**

Families raise their children according to their respective belief systems, which may include values (attitudes, moral, spiritual) and customs (family and community traditions). Western Caucasian (American-European) families emphasize individual autonomy, self-assertion, self-help, self-sufficiency and equality, and lean towards goals that are focused on self-achievement and self-maximization (Hanson, 2011, Kagitcibasi, 2005; Markus & Kitayama, 1991). These values are reflected in parenting practices that encourage children to make personal choices and obtain individual independence as early as possible (Harwood et al., 1999). The emphasis on equality in Western societies has directly impacted the way children are treated across different social groups (e.g., equal opportunities for boys and girls,

and across ethnicities) and social organization (e.g., children are seen as equal partners in relationships and not subjected to hierarchical structures within the family) (Tamis-LeMonda & McFadden, 2010).

The emphasis on importance of equality in interactions could have signalled the gradual decline in children's use of proper or honorific titles (e.g., Mr. & Mrs., Sir & Madam/Ma'am) to address adults who are non-family members. Although some Western communities, for example, in the southern United States, prefer to be addressed by these formal titles (Achtzener, 2011; Shupe & Shupe, 2012), Hanson (2011) remarked that the use of first names is still preferred by most Western Caucasians. The author added that informal greetings might be construed as impolite and 'uncultured' by others. In addition, Western cultures promote gender equity in children: that is, boys and girls, with or without disabilities, are treated equitably and presented with the same opportunities (Hanson, 2011; Simmons & Johnston, 2007). The Western family unit is nuclear, consisting of parents and children. Grandparents and other relatives do not tend to live with the nuclear family. As such, the sole responsibility of raising children (and decision-making) lies with both parents and not with the extended family or community (Hanson, 2011). An 80-year old American Caucasian uncle of the author strongly disagreed with the saying "It takes a village to raise children" (an African proverb). He simply said, "It just takes the parents to raise their children" (C. Brantley, personal communication, 24 November 2014).

In contrast, three common values among the Mexican-American/Hispanic/Latino community is *familism* (in which the family is viewed as a fundamental support mechanism where loyalty and solidarity among members are valued), *personalismo* (where warmth in relationships with family and friends is accentuated) and *respect* (to others, especially to people with authority) (Matos, Torres, Santiago, Jurado & Rodriguez, 2006; Zuniga, 2011). As a result, obedience, loyalty and respect are ingrained in young children. There is a

tendency to place greater emphasis on cultivating politeness and manners in children, and teaching children by using parental authority (Harwood et al., 1999; Matos et al, 2006). Mexican-American/Hispanic/Latino communities practise collectivism and they value interdependence. Their extended family unit consists of parents, children, grandparents, and other relatives (e.g., aunts, uncles, cousins, etc.) living under one roof. As such, parenting responsibilities are shared across the family members and even within the members of the community. Howes et al. (2007) found that 51% of the Mexican families in their study depended on extended family and 30% on friends and neighbours for support in caring for children.

The Inuit are also known to raise their children within an extended family. In addition, Inuit parents place emphasis on children attaining physical rather than verbal competence (Crago, 1990). Dene mothers in Canada placed more value on beliefs centred on spiritual customs, the Christian faith and the importance of advice from grandparents and elders in raising their children than did Western mothers (Jonk & Enns, 2009). In their comparative study of a wider group of Canadian Aboriginal people and Canadians of European ancestry, Cheah and Chirkov (2008) found that the former group accentuated spiritual values and respect to elders/family more than the latter group.

Arabic Muslim Middle Eastern cultures (e.g., Kuwait, Jordan, Turkey, Iran, etc.) organize their parenting and child rearing practices around their Islamic faith, patriarchal family unit and collectivist values. Obedience and obligations to God and parental authority, and steadfast loyalty to family and clans are of paramount importance (Omu & Reynolds 2012; Sen, Yavuz-Muren & Yagmurlu, 2014; Sharifzadeh, 2011; Taleb, 2013; Taleb & AlZoubi, 2015). Taleb (2013) noted that children in Jordanian culture are taught to obey parents early in life. Children's social and education goals are structured around the child's gender, with a general preference for boys to be educated and girls to be orientated towards

household chores (Sen et al., 2014; Sharifzadeh, 2011). In her study, Taleb (2013) found that 73.5% of Jordanian mothers perceived themselves as an authoritative parent, asserting the need to exercise parental influence in raising children within the culture, thus reflecting the Arabic saying “to satisfy God is to satisfy parents” (Sharifzadeh, 2011, p. 392).

Indonesian Javanese family structure is primarily hierarchical. Children are trained to recognize and adhere to status differences in parent-child relationships. Children are assigned a lower status in order to cultivate a sense of dependability on their parents (Keats, 2000).

Similarly, Chinese, Korean and Vietnamese cultures value obedience, discipline, respect for elders, morality, spirituality and harmony (in family, society, and human race). These values stem from Confucian teachings (Chao, 1994; Kim 2012; Kita, 2009; Luo, Tamis-LeMonda & Song, 2013), Taoist philosophies (Chan & Chen, 2011) and Buddhist practices (Mestechkina, Son & Shin, 2014). These values are inclined towards practices that are related to collectiveness and authoritarianism (Kim, 2012). Effort and hard work in learning is treasured and as such, parents are expected to create an environment that will cultivate learning in their children. Children are viewed as extensions of their parents (Chan & Chen, 2011). Therefore, success or failure in children is a reflection of parents’ duty, love and child-rearing practices (Ng, Pomerantz & Lam, 2013). These in turn determine if the family (and ancestors) receive honour or shame (Chao, 1996; Luo et al., 2013). Chinese parenting emphasizes on the parents’ duties, responsibilities, effort and training in children’s learning, which aligns to the concept of *guan* (translated as *to govern, to care for and to love*) and *chiao sun* (*training*) in order to teach, correct and educate children within acceptable behaviours, as explained by Chao (1994). The author added that these beliefs supersede Confucian teaching, and are entrenched within the Chinese culture. Children are expected to conform to family and cultural expectations. In some circumstances, shaming behaviours or practices, withdrawal of love and guilt induction are carried out in order to inculcate modesty,

for children to recognize their place in relation to others, to foster self-improvement, and to build successful learning experiences for the present and future (Fung & Roseberry-McKibbin, 1999; Luo et al., 2013; Yu, Cheah, Hart, Sun, & Olsen, 2015).

In Chinese cultures, a son is of great value to the family. In particular, the eldest son is expected to demonstrate responsibility and good behaviour as an example to siblings and as he gets older, to care and provide for his ageing parents and younger siblings (Chan & Chen, 2011; McHale, Dinh & Rao, 2014). However, Luo et al. (2013) commented in a related paper that there is no gender preference among mainland Chinese families who adhered to the one-child policy. The family, extended family, community and even non-living ancestors are of vital importance to the Chinese. Families and communities are closely knit and filial piety is an important virtue among the Chinese (Luo, et al., 2013; Rao, McHale & Pearson, 2003). Johnston & Wong (2002) found that a significantly high percentage of Chinese mothers valued the good advice of grandparents and older family members in raising children, in comparison to the Euro-Canadian mothers.

Indian cultural values largely stem from the Hindu concept of *dharma* that seeks to live a righteous life through the guiding principles of natural universal laws and spiritually regulated practices. The belief in natural law is embedded in the concept of *samsaras* (process of reincarnation), that includes birth, suffering, death and rebirth (Rao et al., 2003; Saraswathi & Pai, 1997). Children are believed to be a gift of the Gods, born with innocence and *karma* (certain predispositions associated with their previous lives), and as a result, their lives on earth have been inevitably predestined (Mullatti, 1995; Rao et al., 2003). Parents are expected to pamper their very young children and mould them to be part of the family and the community, and reprimand them for their behaviour (including corporal punishment) as they get older (Bornstein & Cheah, 2006; Kakar & Kakar, 2007). Obedience and respect to parents and elders are emphasized in the child. In addition, the child is trained to value family

relationships and to demonstrate politeness when speaking with elders by way of using kinship terms (Issac, Annie, & Prashanth, 2014; Jacob 2011). Not surprisingly, Simmons and Johnston (2007) found that Indian mothers indicated that, in comparison to Euro-Canadian mothers, learning family relationships and expectations was most crucial for young children. Similarly, to the Chinese culture, Indian families live in close-knit relationships, with extended family members, and share parenting responsibilities. However, Issac et al. (2014) stated there is a recent shift, as more Indian families are showing a preference to live within a nuclear family. Family identity and reputation are inseparable. As such, the individual's achievements, failures and integrity, are connected to family upbringing (Kakar & Kakar, 2007). For example, the community may praise and congratulate the family for the child's appropriate manners and success, and bring to the child's attention that his or her own success was only possible because of the family's love and sacrifice. The patriarchal family system within the Indian community is reflected in the preference of male children over females. The male heir is favoured for economic intentions, traditional rituals, and to ensure that the family name extends to the next generation (Jacob, 2011; Kakar & Kakar, 2007). These authors added that the mother-son relationship is far more valued than a husband-wife relationship in Indian cultures. As a result, families may structure their goals and expectations according to the child's gender. Not surprisingly, a significantly higher percentage of Indian mothers in Simmons and Johnston's (2007) study indicated that boys and girls have different goals and expectations, and therefore, they differed in their need for good communication skills.

In summary, the above literature demonstrates differences between parenting and child-rearing practices among families of Western Caucasian and the various cultural groups explored above. The differences appear to be related to organization of family structures, extended family members, and conformity to family values, rituals and traditional/religious

teachings. In addition, differences in interaction partnerships between adults and children, and equality (of opportunities) for boys and girls were evident.

#### **1.4.2 Views related to children's language learning and interaction practices**

Building upon van Kleeck's (1994) pivotal and comprehensive paper on cultural differences, this section will draw upon the various studies that have identified cultural differences in six themes related to beliefs and practices concerning mother-child interactions. These are: a) intentionality, b) ways young children learn, c) important aspects emphasized in children, d) ways parents talk with their children, e) status of interaction, and f) views regarding communication disabilities.

### **1. Intentionality**

A commonly held Western view that has been embedded in language intervention programs is that children have the intention to communicate as soon as they are born (Girolametto & Weitzman, 2002; Snow 1995). As a result, parents begin to (or ask to) interpret the child's sounds, vocalizations, babbling and unintelligible or incomplete words according to what parents think or feel the child is communicating, as a means to engage in a mutual conversation.

However, this view is not espoused by all cultures. The Hispanic people (in Northern New Mexico) believe that children are non-intentional until they are one year old, and for the Western Samoans it is when the child is ambulatory (Ochs, 1982; van Kleeck, 1994). Although Schoeffel and Meleisa (1996) did not make direct reference to intentionality nor specify a particular age, the authors explained that in order for children to be considered as 'full social beings', they must have properly learnt the *anga fakatonga*, (cultural behaviours in Western Samoan society). At the most extreme, the Gusii (of Kenya) believed that children



are unable to be intentional (Dixon, Tronick, Keefer & Brazelton, 1981). As a result, parents/caregivers may neither attempt to interpret what the child might be saying nor converse as much with the child.

Within the Chinese and Indian cultures, young children are to be enjoyed and pampered, and not subjected to harsh discipline (Ho & Kang, 1984; Rao et al., 2003). Children below six years of age in Chinese cultures are considered to be at an “age of not understanding” and are believed to be inept at learning and understanding their environment (Cheah et al., 2009; Ho & Kang, 1984). As such, children are expected to be given greater support and direction in teaching and shaping behaviours. Johnston and Wong (2002) referred to Chinese parents being able to make a distinction between children who have attained the age of “understanding” and “not understanding”. As a result, the authors commented that parents might not generate many teaching opportunities for young children who they believed were inept at learning. Although both the Chinese and Euro-Canadian mothers in their study strongly agreed that babies babbled to indicate communication intent, and that “it was important to find out what young children are thinking”, it appears that Western mothers (in the study) find out “children’s thinking” by interpreting children’s intentions whereas Chinese mothers (in the study) do so through teaching.

## **2. Value of Talk**

Quinn (2005) is of the opinion that verbosity in young children is highly valued in Western cultures. Children in Western cultures are encouraged to be talkative (Hart, 2004; Hart & Risley, 1995). Talkative children are viewed as competent children (Bornstein, 1989; Harwood et al., 1999). Western parents expect their children to join in conversations with adults, lead conversations and ask questions in order to facilitate their own learning (Cheah & Rubin, 2003; Harwood et al., 1999; McCollum et al., 2000). Questioning may be rooted in

individualism and may be traced further back to Socrates' view that questioning self and others provides an avenue for the individual to create and appraise knowledge (Tweed & Lehman, 2002).

Given that verbosity is valued in Western cultures, it is not surprising to note that language intervention programs (based on interaction behaviours observed in Western cultures) advocate and assert the value of parents providing language input to their children. Various researchers have emphasized the importance of parental talk by quantifying the amount of talk and associating these to positive outcomes in children's language skills. This aspect is further outlined in Section 1.5.4.

However, cultures such as the Inuit, do not value talkativeness nor do they encourage children to ask questions or get involved in adults' conversations (Crago, 1990). Polynesian children are not expected to participate in adults' conversations or question elders (Schoeffel & Meleisa, 1996). Instead, quiet children are viewed as obedient and compliant, for example, in Puerto Rican and Polynesian families (Harwood et al., 1999; Schoeffel & Meleisa, 1996).

In South Asian cultural groups, especially in families where hierarchical and patriarchal status are strictly observed, children may not be permitted to remain in the same room when adults interact with one another (Chan & Chen, 2011). Children who are talkative and question adults are viewed as disobedient and disrespectful in Asian cultures (Chan & Chen, 2011). In addition, the authors pointed out that, "maintaining silence in a conversation may serve as an expression of interest and respect" (p.287). Specifically, Williamson (1979) (cited in van Kleeck, 1994) noted that children within the Indian (specifically Tamil) community in Malaysia are not expected to speak with adults unless they were spoken to. However, 36 years later, it is not known if this belief is still practiced. Simmons and Johnston (2007) found that 49% of the Indian mothers (in Canada) agreed to the statement "Talkative children learn better" in comparison to 39% of the Euro-Canadian mothers. However, this difference did not

reach statistical significance in this study. Indian mothers indicated significantly lower agreement for the need for children to be talkative with adults (non-family) in social get-togethers and significantly higher agreement than Euro-Canadian mothers that children ask too many questions. In a similar survey study, Johnston and Wong (2002) found that Chinese mothers in Canada indicated significantly lower agreement to the assertion that young children were permitted to take part in conversations with non-family adults. In addition, a significantly low percentage of Chinese mothers indicated that they frequently encouraged their children to talk to other family members about mother-child joint activities. The Indian mothers in Simmons and Johnston (2007) indicated a similar practice with their children, a finding that was significantly different from the Euro-Canadian mothers.

### **3. Ways young children learn**

Within Western cultures, parents believe that children ought to be encouraged to explore their environment, given the freedom to choose and instructed by way of suggestions instead of commands (Harwood et al., 1999; Matos et al., 2006). It is suggested that learning is facilitated when parents follow their children's lead, provide descriptions and label objects that are within children's interest or focus (Bornstein, 1989; Bornstein et al., 1990). These learning practices are embedded in language intervention programs like Hanen's *It Takes Two to Talk*, where parents are expected to talk about (not instruct) the events or items in the child's surroundings (Manolson, 1992; Pepper & Weitzman, 2004). In addition, Western parents believed that children learn while playing, especially in play partnership and joint interactions with adults (Hanson, 2011; McCollum et al., 2000). However, Mills and Rubin (1992) found that Canadian-born mothers' beliefs about children learning social skills had shifted when the child was between four and six years old. The mothers placed a greater importance on learning through observations when the child was six years old. This finding

aligns with Bronfenbrenner's Ecological Model, where all five environmental layers, including the belief systems, at the macro-systems adapt with changes in the individual's age, indicated as a chronosystem within the Model.

In contrast, Inuit, African Americans, Mexican Americans, West Africans and Polynesians believed that children in general, learnt through observation, listening, imitating adults or through their own diligent work (Crago, 1990; Hammer & Weiss, 2000; Kummerer & Lopez-Reyna, 2006; Law, 2000; Ochs, 1982; Schoeffel & Meleisa, 1996). Other cultural groups believed that children learn with instructions through parental teaching and parental authority, as with the Puerto Ricans (Harwood et al., 1999), Chinese Taiwanese (Jose et al., 2000; Kita, 2009), Mexican American (Kummerer & Lopez-Reyna, 2006), Korean (McCollum et al., 2000) and Southeast Asian (Hwa-Froelich & Westby, 2003) families. In particular, a group of West African mothers (originally from Ghana and Nigeria) residing in London believed that children ought to be taught to speak by way of specific instructions once they start talking. There is an inherent assumption that failure to do would result in the children not being able to learn to speak (Law, 2000).

In their study, Johnston and Wong (2002) reported a high percentage of Chinese mothers who agreed that children learnt best with instructions. In addition, the authors found more Chinese mothers than Euro-Canadian mothers reported higher agreement to the assertion that children who learn through quiet observation would tend to become smart.

Both Chinese and Indian mothers in the Canadian studies indicated lower agreement that children learn important things during play in comparison to the Euro-Canadian mothers (Johnston & Wong, 2002; Simmons & Johnston, 2007). Thus it was not surprising that Indian mothers reported that they engaged in playing less with their children in comparison to Euro-Canadian mothers. When asked about mothers' practice in following their children's conversational topic, both the Chinese and Indian mothers indicated a lower frequency of

practice in comparison to their Western counterparts. However, there was no significant difference between Chinese and Western mothers, and Indian and Euro-Canadian mothers, in terms of correcting their child's word errors. All mothers reported it as an infrequent practice.

#### **4. Important aspects emphasized in young children**

Mothers across cultures may accentuate different values, learning goals or developmental competence in young children. For example, some cultures underscore the need for children to play and read books, while other cultures emphasize academic-teaching and family values.

Western mothers appear to emphasize early achievement of verbal skills and independence in their children at five months. This was evident in a comparative study between American and Japanese mothers, where the former group regulated their children's environment to facilitate independence (Bornstein, Tal, et al., 1992). However, in Johnston and Wong (2002), more Euro-Canadian mothers believed that three year olds are too young to assist in domestic chores when compared to Chinese mothers (Johnston & Wong, 2002). This is in contrast to Hanson's view that Western mothers involved very young children in household chores (Hanson, 2011). Almost all the Euro-Canadian mothers in the Johnston and Wong (2002), and Simmons and Johnston (2007) studies, indicated agreement that play was crucial for learning. However, Chinese and Indian mothers in these studies indicated lower agreement. This may suggest that Chinese and Indian mothers prefer directly teaching their children to foster learning as opposed to playing to stimulate learning.

Within the Chinese culture parents are expected to support children's learning and academic achievement (Ng et al., 2013). However, Cheah et al. (2009) and Johnston and Wong (2002) posited that early academic achievement was not a priority as young children below six years old were believed to be below the "age of understanding" (Cheah, et al.,

2009; Johnston & Wong, 2002). In contrast, Chinese American and Taiwanese Chinese mothers were reported to have not only accentuated academic achievement but had also exercised control over their children's surroundings more than European American mothers had (Jose, et al., 2000). Given that the children of Chinese American, Taiwanese Chinese and European American mothers (children's mean age was 5.67, 5.3 and 5.60 years old respectively) were older than those in Cheah and colleagues' study (mean age = 4.23 years), and that of Johnston & Wong (2002) (children between 2 and 4 years old), there is a possibility that academic achievement was emphasized in older children.

Book reading with young children is highly recommended for developing verbal language and literacy skills (McDonnell, Friel-Patti & Rollins, 2003; Valdez-Menchaca & Whitehurst, 1992). In addition, the benefits of book reading in English were found to be extended to bilingual children's verbal language and literacy skills (e.g., Kalia, 2007). Euro-Canadian mothers reported a higher frequency of reading books to their children in comparison to their Asian counterparts (Johnston & Wong, 2002; Simmons & Johnston, 2007). Book reading at bedtime was not a frequent practice among Chinese and Indian mothers. Instead, many Chinese mothers reported frequent use of flashcards and picture books to teach children new words (Johnston & Wong, 2002). Indian mothers frequently practised religious songs and prayers with their children (Simmons & Johnston, 2007), supporting the view of religion-centred child-rearing practices among Indian communities (Kakar & Kakar, 2007).

In non-Western cultures, especially in cultural groups that subscribe to the collectivist dimension, learning about collective (family or community) goals, relationships and family values takes precedence over developing personal verbal competence, choices and independence (Triandis, 1989). Family values encompass obedience, listening and conformity to cultural values and behaviours, use of kinship terms and polite titles as a sign

of respect towards elders, maintaining family harmony, adhering to a spiritual faith and engaging in traditional customs. At least one of these values was emphasized by Puerto Rican (Harwood, et al., 1999), Inuit (Crago, 1990), Dene (Jonk & Enns, 2009), Polynesian (Schoeffel & Meleisa, 1996), Chinese American and Taiwanese Chinese (Jose et al., 2000), Korean (McCollum et al., 2000) and Vietnamese/Southeast Asian (Hwa-Froelich & Westby, 2003) mothers. Given that equality and use of first names is a common practice in Western cultures (Hanson, 2011), it was remarkable that 89% of Euro-Canadian mothers believed that it was more important for children to learn formal titles than to learn names of objects, while only 55% of the Chinese mothers indicated the same. A higher percentage of Indian mothers believed that children “must be taught to depend on family” a finding that was significantly different from Euro-Canadian mothers (Simmons & Johnston, 2007). However, a higher percentage of Chinese mothers (57%) disagreed with the notion that speech clarity in children was more important than politeness.

## **5. Ways parents talk with their children**

Western parents believe it is advantageous to be talkative with children as it provides them with verbal opportunities, experiences and explanations to understand language and they do so by commenting, labelling and describing events and objects within the children’s environment (Bornstein et al., 1990; Jose et al., 2000; Hart, 2004; Hart & Risley, 1995; Harwood et al., 1999; McCollum et al., 2000). Talking during routine activities, for example, meal-times and bath-times, is believed to be crucial to providing children with rich linguistic input, as highlighted in language intervention programs like Hanen (Pepper & Weitzman, 2004).

Quinn (2005) reported that Gusii mothers believed it was impractical to talk to babies. Chinese mothers indicated that they were less likely to talk with their children regarding their

own activities at school or home but talked about the things they were doing when playing together (Johnston & Wong, 2002). In addition, mothers indicated that they would be more likely to imitate their child's words and add new words, and reported a smaller tendency to ask the child to repeat after them. Children's speech errors were not directly corrected in the belief that children ought to be able to make their own discoveries and learn from their own mistakes, a view that was shared by both Euro-Canadian and Chinese mothers (Johnston & Wong 2002).

Although language intervention programs cautioned parents against asking children too many questions that seek to display knowledge, that is, test questions (Manolson, 1992; Pepper & Weitzman, 2004), van Kleeck (1994) reported that American parents tended to ask these questions in an attempt to demonstrate performance in their children. Mothers from other cultures used test questions for different purposes. For example, Inuit mothers were reported to use test questions in order to teach children (Crago, 1990), whereas Indian mothers did so to ensure that children understood the concept or word (Simmons & Johnston, 2007). Indian mothers in the latter's sample also believed that parents ought to correct their children's speech errors. In addition, they reported that they were less likely to talk to their children during everyday routine activities, suggesting reduced parental talkativeness. Indian mothers reported that they were more likely to ask their children to repeat after themselves than to imitate their children by adding new words.

## **6. Status of interaction**

Language intervention programs used with Western-based populations highlight the need for parents to form play partnerships and engage in joint interactions with children to promote the child's language. As a result, children are encouraged to take the lead or initiate conversations (Manolson, 1992; Pepper & Weitzman, 2004). These recommendations are rooted



in the assumption that all cultural groups share the view that parents or adults and children have equal status in interactions. In some societies, family hierarchical patterns determine how relationships and interactions are organised within the family. For example, Polynesians (defined as Pacific Islanders who are of Samoan, Tongan, Niuean, Cook Island, Tokelauan and Fijian descent) in New Zealand recognise fathers as the head of the family, below whom is the mother, followed by the children who are ranked according to their birth order and gender (Schoeffel & Meleisa, 1996). The authors added that such family strata means that individuals in the higher ranks determine the speaking rights in the family and the individuals at the lower levels are compelled to follow instructions or else be subjected to harsh correction. Indian mothers in Canada had more strongly agreed than the Euro-Canadian mothers that fathers were the decision makers in the family (Simmons & Johnston, 2007), further attesting to the Kakars' view that Indian family is mainly patriarchal (Kakar & Kakar, 2007).

In Western Samoan societies, children are assigned different caregivers as they advance in age (Ochs, 1982). The author added that newborn babies are initially cared for by their mothers, and as they mature, are primarily cared for by an older sibling. As a result, older siblings provided language input to a younger child.

### **1.4.3 Views on communication disabilities**

Western families ascribe the cause of childhood disabilities to factors associated with a genetic condition, medical trauma (before and during pregnancy), environmental mishaps (e.g., injuries and toxins), and diseases (Hanson, 2011). The author added that Western families have moved away from the belief that a mother's caregiving practices were the cause of some disorders (e.g., autism) and now believe that the (disabled) child's quality of life can

be improved by obtaining scientific knowledge, accessing intervention and working with professionals to assist the child to gain skills for independent living.

In other cultures, childhood disabilities reflected the particular group's health belief systems. Chinese, Vietnamese, Cambodian and Laotian communities believed that the child's disabilities (including intellectual disabilities) were caused by mothers not observing to taboos during pregnancy (Chan & Chen, 2011). The authors commented on a Chinese parent from Hong Kong who believed that cleft palate was related to the mother's viewing of horror movies during the early stages of her pregnancy. Other cultural groups attribute the cause of disabilities to uninvited spiritual affiliations (e.g., demons, ghosts, etc.), a curse from ancestors, one's past life (i.e., *karma*), particular folk or religious beliefs, mother's caregiving practices, divine punishment, poor relationship with God or lack of faith, a fated destiny or challenge from God. At least one of the above beliefs was upheld by African American, Latino, Hispanic, Chinese, Vietnamese, Cambodian, Laotian, Korean, Indian, Samoan and Middle-Eastern families in a range of research studies (Chan & Chen, 2011; Goode, Jones & Jackson, 2011; Hwa-Froelich & Westby, 2003; Jacob, 2011; Kita, 2009; Mokuau & Tauili'ili, 2011; Morgan & Tan, 2011; Salas-Provance, Erickson, & Reed, 2002; Sharifzadeh, 2011, Zuniga, 2011). In addition, Hwa-Froelich and Westby (2003) commented that hidden disabilities (for example, communication deficits from cleft palate, learning difficulties) were not viewed as a disability by Southeast Asian parents but as a product of the child's indolence, stubbornness, destiny or disposition.

Parents' views on the possible causes of disabilities in children might influence the type of intervention they may seek (or may not seek) for their children. For example, during her work experience as a Speech-Language Therapist in Malaysia, the author had visited a 15-year-old teenager with an unrepaired cleft lip and palate who was unschooled and confined largely at home in a semi-rural city in the East Coast of Peninsular Malaysia. The author was

part of a multi-disciplinary cleft lip-palate surgical and rehabilitation team who were promoting and carrying out free surgical, medical and therapy intervention in 1999. The mother of the teenager commented that she believed her son's cleft-lip and palate was a 'divinely appointed test' which she and her family members had been destined to endure with God's strength, and therefore the surgical repair was unwarranted. In addition to a fatalistic focus, stigma, shame and embarrassment may hinder parents from seeking professional help, or when they do enrol in intervention programs, they may not be as motivated in the sessions (Cheng, 1990). A significantly higher percentage of Indian mothers in Canada were of the view that children with learning difficulties were an embarrassment to the family in comparison to Euro-Canadian mothers. In addition, more Indian mothers than Euro-Canadian mothers indicated agreement that children's disabilities created adversity and misfortune. However, both the Indian and Euro-Canadian mothers believed that families and therapists shared responsibility for the child with learning difficulties (Simmons & Johnston, 2007).

## **1.5 OBSERVED PRACTICES RELATED TO MOTHER-CHILD INTERACTIONS**

In addition to their distinct reported beliefs system, Western Caucasian and Asian mothers have reported and were observed using different interaction patterns with their children (Bornstein et al., 1990; Johnston & Wong, 2002; Jose et al., 2000; McCollum et al., 2000; Vigil, 2002). These interaction patterns seem to be rooted in their different cultural ideological belief systems (van Kleeck, 1994; Vigil & Hwa-Froelich, 2004). Western mothers reported interaction behaviours that were focused on the child's interest in order to foster the child's individual verbal and conversational skills by using language-modelling utterances through play partnership activities. In contrast, non-Western mothers (Asian mothers in particular), reported interaction behaviours that promoted the child's focus on the adult's interests, which is believed to conform the child to family values and expectations by using

directive utterances in teaching activities. Several studies have shown that specific mother-child verbal and interaction behaviours are positively correlated with children's language skills (e.g., Girolametto and Weitzman, 2002; Girolametto et al., 1999). These interaction behaviours have been embedded into existing language intervention programs (e.g., It Takes Two to Talk Hanen Program [Pepper & Weitzman, 2004]) to develop the language skills of children with communication difficulties. However, most of the interaction and verbal behaviours advocated in these programs stemmed from studies with mothers who were of Western Caucasian origin. The application of these findings to non-Western populations has been cautioned (e.g., van Kleeck, 1994).

Lasky and Klopp (1982) defined an interaction as “a linguistic or extralinguistic event involving two or more persons that required a verbal or nonverbal response, was itself a response, or attempted to provide information” (p. 9). The specific interaction and verbal behaviours of mothers when communicating with their children can be grouped in three categories: language-modelling utterances (Girolametto et al., 1999; Girolametto, Weitzman, van Lieshout & Duff, 2000; Girolametto & Weitzman, 2002), conversation-eliciting utterances (Tulvsite, 2004), and directive utterances (Mahoney & Neville-Smith, 1996; Murray & Hornbaker, 1997; Girolametto et al., 1999; Girolametto et al., 2000; Vigil, 2002). The verbal language behaviours that will be considered are talkativeness, vocabulary diversity and sentence length.

### **1.5.1 Language-modelling utterances**

These utterances share similar features with *child-directed speech or talk*, *child-centred speech or talk*, or *facilitative interaction*, that is, maternal input behaviours that are child-focused instead of adult-focused (Matychuk, 2005; Snow, 1972, 1995). Language-modelling utterances refer to maternal utterances that are responsive to children's utterances

(Girolametto et al., 2000). These behaviours include maternal imitation, expansion, description or self-talk, labels, commenting or parallel-talk, interpretations, verbal praise or acknowledgement of a child's words and actions (Girolametto et al., 1999; Girolametto et al., 2000; Girolametto & Weitzman, 2002). A brief overview of these interaction behaviours, in terms of types, definitions and roles of these behaviours in promoting children's language skills is briefly considered in the following sections.

#### ***1.5.1.1 Types, definition and role***

*Imitation* refers to mothers' direct copying of the child's words and sounds (Girolametto et al., 2000). It is suggested that mothers who repeat children's words show that they are listening to and responding to the child's interests (Pepper & Weitzman, 2004), and have children who tend to imitate their mothers in return (Girolametto et al., 2002), which in turn facilitates joint attention and meaningful social interactions (Forman & Kochanska, 2001). The finding is that when mothers label, describe, comment or parallel-talk about the objects within children's environment (without asking children to respond), they are believed to be providing children with rich language input that would enable children to understand and establish connections with words and objects (Girolametto & Weitzman, 2002). Labelling, descriptions and commenting refer to mothers' input that is *here and now*, and Snow and Dickinson (1990) used the term *decontextualized language* to refer to language (narratives and explanations) about activities in the past or future.

Expansions and extensions refer to instances where the mother contingently and immediately lengthens the child's words or sentences (all or part) during mother-child interactions by using either correct grammatical structures (expansions) or by using both correct grammatical structures and new additional information (extensions) (Girolametto et al., 1999; Girolametto et al., 2000). Although the definition of expansion by Girolametto et

al.'s (1999) was similar to the definition of recast in Girolametto et al. (2000), the terms expansion and extension will be used in the thesis. Interpretations of a child's intended words occur when the mother transforms the child's vocalizations into the words she thinks the child is trying to communicate. This interaction behaviour is believed to signal to the child that the mother is listening with interest, thus providing the child with better opportunities to understand and imitate language (Girolametto et al., 1999; Pepper & Weitzman, 2004). Verbal praise or acknowledgements are believed to motivate and steer the enthusiasm of children (with and without communication difficulties), in order to positively support their learning (Bayat, 2011). Drawing upon related research, Bayat (2011) made a distinction between *person praise* and *process praise*. The former is given on the basis that the child's character or intelligence is appraised (e.g., "good boy" or "smart girl") and this is believed to orientate the child towards performance, thus resulting in negative behaviour in the child. Whereas process praise is given with reference to the child's specific behaviour (e.g., "you have done a good job") and is believed to positively motivate and contribute to the child's learning (Bayat, 2011). Although Girolametto et al. (2000) categorized verbal praise or acknowledgements as *other utterances*, this particular interaction behaviour has been included as part of language-modelling utterances as the authors' definition and examples of praise/verbal acknowledgement (e.g., "good job", "nice sharing", p.1114), mirror the components of *process praise*.

Language-modelling utterances are responsive behaviours that facilitate and encourage reciprocal exchanges within mother-child communication, thus aiding the child to easily understand and learn both language and communication skills (MacDonald & Carroll, 1992; Murray & Hornbaker, 1997; Lieven 1994). These interaction behaviours follow the child's lead, match the child's current interest, focus of attention and language skills, and do not require the child to explicitly respond or 'perform' (Girolametto et al., 2000; Murray &

Hornbaker, 1997; Roberts & Kaiser, 2011). These *responsive* interaction behaviours were derived from the social interactionist model of language development. In addition, some studies have found a significant positive relationship between mothers' use of responsive interaction behaviours and children's language development (Conti-Ramsden, 1990; Cross & Morris, 1980; Gridley et al., 2015).

### ***1.5.1.2 Cultural differences***

Western Caucasian mothers were reported to imitate their children's words and sounds (Forman & Kochanska, 2001). Similar findings were noted with Cameroon-Nso and German infants and toddlers (Borchert, Lamm, Graf & Knopf, 2013; Teiser et al., 2014), with Aboriginal, Bushmen and Western children (Nielsen, Mushin, Tomaselli & Whiten, 2014) and with Caucasian American and Chinese American children (DiYanni, Corriveau, Kurkul, Nasrini & Nini, 2015). Despite the universality of imitation, DiYanni and her colleagues found cultural differences in children's selective imitation. Likewise, variations in maternal imitation among Western sub-groups were described in a study of parents and infants in Greece and Scotland (Kokkinaki & Vasdekis, 2003). It was found that Greek parents were more likely to imitate their infants than were the Scottish parents. However, Greek infants were found to imitate their parents more than Scottish infants did.

Other mother-child interactions, such as expansions, extensions, interpretations, descriptions, responsive labelling, and commenting behaviours have been reported to be used extensively by Western mothers, (e.g., Girolametto et al., 1999; Roberts & Kaiser, 2011; Vigil et al., 2005). In contrast, non-Western mothers were found to use explicit teaching-like interaction patterns with their children (Burns & Radford, 2008; Jose et al, 2000).

The use of praise by mothers across cultures also varied. Anglo-American mothers were observed to praise their young children during teaching, free play and feeding activities

more than Puerto Rican mothers did (Harwood et al., 1999). However, when compared to Māori mothers, New Zealand European mothers were found to use less praise (termed as *rewards* in the study) with their children (Podmore & St. George, 1986). Some cultures refrain from praising their children for varied reasons. Within the Chinese culture too much praise is viewed as reducing parental authority, which could possibly result in disobedient children (Fung & Roseberry-McKibbin, 1999; Luo et al., 2013). Similarly, Gusii mothers reportedly did not use praise, as it was viewed as fostering pride and disobedience in children (Quinn, 2005). Language intervention programs have not only recommended the use of praise with children but have also stipulated ways to praise the child with communication difficulties in order to facilitate learning process (Pepper & Weitzman, 2004).

#### ***1.5.1.3 Associations with children's language skills***

Several studies have shown that maternal use of language-modelling utterances and child-centred interaction patterns were strongly associated with positive language outcomes in young children. These interactional behaviours have been shown to promote the child's language acquisition and learning skills, and increased vocabulary skills in those both with and without language difficulties (Bloom et al., 1996; Conti-Ramsden, 1990; Girolametto et al., 1999; Girolametto et al., 2002; MacDonald & Carroll, 1992; Snow 1972; Tamis-LeMonda, Bornstein & Baumwell, 2001). In particular, the use of language descriptions and commenting have been found to be positively related to children's vocabulary levels (Newport, Gleitman & Gleitman, 1977).

Girolametto and Weitzman's (2002) study of toddlers and pre-schoolers found that the caregivers' use of language-modelling utterances and child-centred responses were significantly and positively associated with pre-schoolers' (mean age = 3.96 years) total number of utterances, total number of different words and total number of multiword



combinations. However, the authors found that the use of language-modelling utterances was not significantly related to the toddlers' (mean age = 2.41 years) total number of different words or multiword combinations, but was significantly and positively correlated with the toddlers' total number of utterances. The authors explained that the reason caregivers' use of language-modelling utterances was not significantly correlated with the child's total number of differences or multi-word combinations was possibly attributed to the age of the child. Caregivers were found to have used more simple labels with toddlers than with pre-schoolers in order to facilitate the former group's early language and vocabulary skills. In contrast, caregivers used utterances that were more complex and added language with pre-schoolers. As a result, caregivers' use of language-modelling utterances were significantly and positively correlated to all three measures of child language skills, as posited by Girolametto and Weitzman (2002).

In a study of 33 parent-children dyads of multicultural origin (participants described as White, Black, Hispanic, Asian and mixed race), Rowe (2012) found that mothers' use of narratives and explanations (decontextualized language) when children were 42 months old was strongly and positively associated with children's larger vocabularies one year later. Although the author did not specifically examine variations within ethnicity nor consider other type of language-modelling utterances, the multicultural sample within the study signals an emerging and increasing inclusion of diverse populations in empirical studies. Currently, the association between a mother's use of different interaction patterns and the child's language skills in Asian populations is unknown as there is no such publication.

Mothers' use of imitation or partial imitation has been found to be strongly associated with children's language acquisition (Wells, 1981). Lasky and Klopp (1982) found that maternal use of exact imitation and expansion were significantly and positively related to children's mean length of utterance (MLU). In addition, the authors found the use of

acknowledgements by mothers to be positively associated with the typical child's MLU but not with the MLU of the child with language disorders. However, the use of naming or labelling was not associated with children's MLU in both groups.

The use of language-modelling utterances by mothers of late-talking children was also found to be significantly associated with a child's language skills. Girolametto et al. (1999) defined the late-talking children in their study as those with expressive vocabulary delay, that is, total vocabulary was below the fifth percentile, as measured by the MacArthur Communication Development Inventory (CDI) (Fenson, Marchman, Thal, Dale, Reznick & Bates, 2007). In particular, a mother's use of imitation and interpretation was significantly and positively associated with the child's total number of different words, size of vocabulary, total number of utterances and word combinations at pre- and post-parent-centred language intervention programs (Girolametto et al., 1999). In addition, the authors also found mothers' use of expansions to be significantly and positively associated with all of the above measures of children's language skills, with the exception of total number of utterances. However, they found no significant correlations between mothers' responsive labelling with any of the child language measures. Responsive labelling in the study was defined as labels used by mothers while the mother and child were jointly attending to or focusing on the object (Girolametto et al., 1999). The authors posited that mothers' use of responsive labels was usually associated with later language skills and thus mothers did not use these with their late-talking children, whose mean age in the sampled population was 29 months.

### **1.5.2 Conversation-eliciting utterances**

This term refers to mothers' use of varied question forms to generate a verbal response from the child and is believed to promote and maintain conversation (Tulviste, 2004). The author's example of conversation-eliciting utterances included "Why do you think so?",

“What happened to her?”, “Tell more”. These were referred as conversation control utterances by Girolametto et al., (2000), and as interaction promoting strategies by Girolametto and Weitzman (2002). These categories consist of various types of utterances that essentially do not constrain the child’s responses or direct behaviour but seek to foster conversations and repair breakdowns in conversation (Girolametto et al., 2000; Tulviste, 2004).

#### ***1.5.2.1 Types, definition and role***

Conversation-eliciting utterances include clarification questions (i.e. to obtain meaning to child’s previous utterance), all WH-questions (i.e., who, what, which, where, when, how, why) and conversational yes or no questions (e.g., questions that are responded with yes or no, but do not seek to compel the child’s behaviour), and turn-taking. Conversation-eliciting behaviours draw the child to participate in the conversation and sustain the interaction, thus facilitating the child’s social, cognitive and emotional development (Tulviste, 2004). Mothers who engage in these behaviours when interacting with their children are providing children with opportunities to develop interaction and language skills (Pepper & Weitzman, 2004).

#### ***1.5.2.2 Cultural differences***

Western Caucasian mothers were observed to have used more conversation-eliciting utterances than non-Western mothers (Bloom et al., 1996; Bornstein et al., 1992). Cristofaro and Tamis-LeMonda (2012) found that African American mothers had used more WH questions than mothers of Latino and Caucasian or mixed ethnicities.

Swedish-Estonian, Estonian and American mothers (the former living in Sweden and the latter two living in Estonia) were found to use more conversation-eliciting behaviours than Finnish, Swedish, Swedish-Finnish mothers (the former living in Finland and the latter two living in Sweden) during meal-time interactions (Tulviste, 2004). Tulviste was surprised

by this result, as she indicated that Estonian mothers were generally viewed as less talkative, and in addition, were found to use fewer conversation-eliciting utterances with their young children in a previous study (Junefelt & Tulviste, 1997). This finding sits well with Crago's caution in generalizing cultural findings across a time span (Crago, 1990).

Although Asian mothers were reported to have used a *controlling* parental style with their children, and were observed to have used directive interaction patterns with their children (Chan & Chen, 2011; Vigil, 2002), there is limited information on the conversation-eliciting utterances used by Asian mothers.

#### ***1.5.2.3 Associations with children's language skills***

Caregivers' use of interaction-promoting utterances were significantly and positively associated with typically-developing children's total number of utterances, total number of different words and total number of multiword combinations (Girolametto & Weitzman 2002; Rowe, Pan, & Ayob, 2005). In particular, Cristofaro & Tamis-LeMonda (2012) found that mothers' use of WH-questions was significantly and positively associated with children's vocabulary size, but was not correlated with children's vocabulary diversity. Teachers' use of WH-, clarification- and conversational yes or no- questions, but not topic control, were positively and significantly correlated with children's sentence length, vocabulary diversity and amount of talk (Girolametto et al., 2000).

### **1.5.3 Directive utterances**

Directive utterances refer to behaviours that seek to directly manipulate the child's behaviour (behaviour control) and constrain the child's responses (response control). The term *directive* is used to indicate an imperative, command or instruction to elicit a desired response or action from the child (Mahoney & Neville-Smith, 1996; Murray & Hornbaker,

1997). Directives have been reported to be used to instruct and manage children's behaviours (Hoff-Ginsberg, 1991; Schieffelin & Ochs, 1986) by

1. middle-class Western Caucasian mothers (Tulviste, 2004)
2. mothers of children with communication disabilities (Mahoney & Neville-Smith, 1996; Vigil et al., 2005; Marfo, 1990; Rescorla & Fechnay, 1996; Conti-Ramsden, 1990), and
3. teachers (Girolametto et al., 2000; Tizard & Hughes, 1984).

#### ***1.5.3.1 Types, definition and role***

Behaviour-control utterances include attention directives and verbal prohibitions or reprimands. Attention directives refer to “utterances that direct the child’s attention to an object or call children’s name to get their attention” (Girolametto et al., 2000, p. 1113). Two types of attention directives have been identified: re-directives and follow-in directives. Re-directives is defined as adults re-directing children’s attention or topic to the adult’s activity or agenda, resulting in a new focus of attention or topic (for example, “Look here”, “See that”). Re-directives were also referred to as *lead-prescriptives* by Akhtar, Dunham and Dunham (1991) and as *lead attentional directives* by Masur, Flynn and Eichorst (2005). Follow-in directives refer to directives issued when following the child’s lead, that is, it is directly related to child’s topic of conversation, interests or activities, whilst maintaining the child’s current focus of attention and is within the developmental abilities of the child (Mahoney & Neville-Smith, 1996; McCathren, Yoder & Warren, 1995). Follow-in directives were also referred to as *follow-prescriptives* and *follow behavioural directives* by Akhtar, et al. (1991) and Masur et al. (2005) respectively. Examples of follow-in directives are “Put the block in here”, “Look at this” (Masur et al (2005, p.66). Verbal prohibitions or reprimands

refer to use of negative commands to halt, manipulate or manage the child's ongoing behaviour (Tulkin & Kagan, 1972).

Response-control (directive-like) utterances are used in play to directly manipulate and impede the child's actions and words (e.g., Girolametto et al., 2000; Tulviste, 2004; Lasky & Klopp, 1982; Murray & Hornbaker, 1997). Examples of these include

1. use of commands or imperatives (e.g., instructing the child to do an action, for example, "pick up toy")
2. use of test or restrictive questions (asking the child to reply to an obvious answer, for example, showing the child a red car and asking the child "what colour is this car?")
3. direct modelling of the required response (e.g., asking the child to "Say car")
4. direct corrections (e.g., "no it is not a car, it is a truck")
5. adult's control of conversational topic, turn, or play within the mother-child interactions (for example, the mother's higher ratio of number of words within the interaction and higher number of turns signals conversational dominance (Lefkowitz, Kahlbaugh, & Sigman, 1996).

There is little agreement on the value of response-control (directive-like) interaction style in promoting children's language and communication skills. Proponents of directive interaction behaviours assert that children receive salient language input and actively participate in interactions when directives are used (Mahoney & Neville-Smith, 1996; Tannock, 1988). In particular, follow-in directives are believed to promote children's vocabulary and language learning skills, and participation in conversations (Cress, et al., 2008; Mahoney & Neville-Smith, 1996; McCathren et al., 1995; Tomasello, & Farrar, 1986). Directives serve as a direct reference to the object or activity and are thus seen as particularly beneficial for the child to make associations with the words and objects in his or her environment (Barnes et al., 1983; McCathren et al., 1995). In a recent study, two year old

children were found to be able to learn novel words when directive utterances were used (Callanan, Akhtar & Sussman, 2014).

However, other researchers emphasized on the limited use of directive strategies in interactions as it is believed to work against the child's interests and activities in the *here and now* (in topic choice and content material), thus restraining language learning (MacDonald & Carroll, 1992). A directive style of input is believed to be semantically non-contingent, hinder opportunities for joint engagement, impede children's verbal output, and restrain children's ability to elaborate, make inference or give information in conversations (Girolametto et al., 2000). In addition, the use of re-directives is believed to inhibit children's language development (McCathren et al., 1995). The type of directives used is believed to have different outcomes for the child's language skills (Akhtar et al., 1991; Mahoney & Neville-Smith 1996; McCathren et al., 1995). As a result, there appears to be no conclusive agreement on whether directives promote children's language skills.

#### *1.5.3.2 Cultural differences*

**Behaviour-control utterances.** Mothers in different cultures use different verbal behaviours to manage their children's activities from a very early age (Bornstein et al., 1990). In the latter's comparative cross-cultural study involving 48 mothers with five-month-old infants, the authors found that Japanese mothers directed the infant's attention to things and events in the environment that the child was not attending to. In contrast, American Caucasian mothers promoted the child's interests and attention to the things and events in the environment that the child was already attending to. American babies were found to have explored their environment and produced positive vocalizations more than Japanese babies who tended to express negative vocalizations.

In a longitudinal study of 10 Chinese and British Caucasian caretakers of children (from age five to 18 months), Chinese mothers were found to consistently regulate their infant's attention to follow the mother's lead and manoeuvre the play items and child's hands, in order to demonstrate play with objects (Vigil, 2002). In contrast, British Caucasian caretakers focused their attention on the child's interests and leads and permitted them to explore their environment.

Tulviste (2004) found that Estonian mothers directed more of their children's attention and behaviour than did Swedish and American mothers in their sample. Harwood et al (1999) reported that Puerto Rican mothers were more likely to direct their child's attention during free play, social play, feeding times and teaching sessions when compared to Anglo-American mothers in their sample. Southeast Asian caregivers (Hwa-Froelich & Westby, 2003) were found to use verbal prohibitions and verbal reprimands to mould children to develop the required behavioural and learning skills. Taiwanese Chinese mothers were reported to use more negative (utterances that were critical) than positive feedback while playing blocks with their four-year-old children (Tamis-LeMonda, Sze, Ng, Kahana-Kalman & Yoshikawa, 2013). Jose et al. (2000) reported that Chinese American and Taiwanese mothers regulated their children's surroundings more than the Euro-American mothers in their sampled population.

**Response-control utterances.** Several studies have shown that Western mothers were less likely to use response control utterances in comparison to non-Western mothers. Inuit mothers were found to use more directives than expansions with their children, they used direct modelling to teach greetings, and not only asked their children test questions but even modelled the correct answer (Crago, 1990). Māori mothers were found to use more teaching behaviours than New Zealand European mothers (Podmore & St. George, 1986). Examples



of teaching behaviours in the study were, “This colour is pink,” “If you put your container down, it will sink like this” (p. 376).

In an effort to organize their infants’ behaviour, Harwood et al. (1999) found that Puerto Rican mothers used direct commands to get infants to accomplish (or not to accomplish) a particular task. In contrast Anglo-American mothers indirectly commanded infants by suggesting that infants complete (or not complete) a given task. However, the authors did not provide examples of the *suggested* direct and indirect commands. Nigerian mothers were observed to use direct modelling and corrections (termed as *instructional talk*) with their young children (Burns & Radford, 2008). In addition to being directive, the authors added that the mothers were also providing their children with semantically responsive linguistic input (for example, by using extended repetition and praise). An example extracted from their study was Child: “I did train”. Mother: “You did train. Good boy” (p. 205, Burns & Radford, 2008).

Kita (2009) reported that Chinese mothers used more instructional language (or utterances with a teaching intent) with their children compared to American mothers. Jose et al (2000) reported that Chinese American parents used more directives in interactions with their children when compared to European American mothers. The authors did not specify nor give examples of directives. However, they explained that parental behaviours observed in the videotaped interactions (rated on a 7-point Likert scale) and coding reliability (by two other raters) for parental ‘directiveness’ was 86%. The authors cautioned interpretation of the observed findings as the typical average length of the recording was only 2.68 minutes.

Variations in the use of response control behaviours were also noted within Western cultures, that is, between North American and European mothers, as evident in the study conducted by Tulviste (2004). The author found that Estonian and Swedish Estonian mothers used significantly more directive behaviours (e.g., “Eat salad!”) with their children than

Swedish, American, Finnish and Swedish-Finnish mothers. The author attributed this maternal behaviour to be partially due to the Estonian mothers' upbringing in the formerly strict Soviet era, where talk and behaviour had to conform to the values of the government of the day. Given that the Estonian mothers were educated at the tertiary level and lived in urban areas, Tulviste's (2004) findings challenged Hoff-Ginsberg's (1991) view that directives are not used by middle-class mothers.

#### ***1.5.3.3 Associations with children's language skills***

Studies that examined the association between the use of directives and child language skills have found contradictory results. Some studies have found a positive correlation between the use of directives and children's rate of language development (Barnes et al., 1982; Lasky & Klopp, 1982). In particular, mothers' use of directives was positively associated with a higher number of verbs in children's early vocabularies (Tomasello, Mannle & Kruger, 1986). Other studies have associated directives with children's poor participation and lower initiations in interactions, poor language development, lower vocabulary size and passivity in children (see review in Cress et al., 2008; Murray & Hornbaker, 1997).

Akhtar et al., (1991) found that follow-in directives correlated positively with children's vocabulary acquisition. Murray and Hornbaker (1997) argued that directives that scaffold children's activities and fall within the child's *zone of proximal development* promoted positive responses from children. The term *zone of proximal development*, rooted in cognitive developmental theory, was introduced by Lee Vygotsky and defined as *the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers* (Vygotsky, 1978, p. 86). In other

words, learning in children is most facilitated when caregivers are able to shape the tasks or skills that children are yet to execute independently within the close proximity zone of children's developed skills (actual level of development) and yet-to-be-developed skills (potential level of development).

The use of directives has been found to be negatively associated with children's language and vocabulary development (Corte, Benedict, & Klein 1983; Nelson, 1973; Newport et al., 1977; Tizard & Hughes, 1984; Tulviste, 2004), and children's reduced participation in interactions (Mahoney & Powell, 1988; Mahoney & Neville-Smith, 1996; Prizant, Wetherby & Roberts, 1993).

Several studies found that mothers of children with developmental delay used more directives than mothers whose children were developing normally during interactions (Cress et al., 2008; Mahoney & Neville-Smith, 1996; Marfo, 1990 (review of studies), Marfo, 1992; Tannock, 1988). Interestingly, Lasky and Klopp (1982) found no difference in the frequency of maternal use of direct modelling with mothers of typically-developing and language-disordered children. Instead, the authors found significant negative correlation between a mother's frequent use of correction and the typically-developing child's MLU, but not for the language-disordered child's MLU. There was no relationship between a mother's use of commands with the child's MLU for either typical or language-disordered children.

However, teachers' use of directives (behaviour-control utterances) was significantly and negatively associated with children's vocabulary diversity and sentence length (Girolametto et al., 2000). In addition, the authors found that there was a significant negative relationship between a teacher's turn-taking control and children's amount of talk, vocabulary diversity and sentence length.

In summary, the use of directives that control children's attention, behaviour and conversations has been found to not only impede children's language skills, but also promote

children's vocabulary skills and learning of new words. Thus the author of this thesis proposes that the value of directives appears to hinge on whether they occur in the context of children's topics, interests and focus of attention or the adult's topic, interests or redirection of attention.

#### **1.5.4 Verbal productivity**

Verbal productivity refers to specific and measurable components of expressive language, that is, quantity of talk, vocabulary diversity and sentence length.

##### ***1.5.4.1 Types, definition, and role***

Quantity of talk indicates the level of the speaker's talkativeness (Klee, 1992) and is associated with children's rate of vocabulary development (Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991). Vocabulary diversity refers to the different types of words used by the speaker. Parents who use more different words with their children provide their children with more opportunities to hear and use these words themselves, and learn language (Hart, 2004; Hart & Risley, 1995; Rowe, 2012). The number of words within a sentence (i.e., mean length of utterance) provides valuable information about children's grammatical language development (Hoff & Naigles, 2002). The number of word combinations that mothers use when speaking with their children would indicate if the mothers' sentence length was within the developmental capabilities of the child. For example, maternal use of short and simple sentences (a characteristic of child-directed speech) provides children with salient information to process and understand language (Matychuk, 2005; Snow, 2014).

##### ***1.5.4.2 Cultural differences***

Talkativeness is valued by Western Caucasian mothers as it is believed to serve as a tool to provide children with greater opportunities to hear 'rich language input' and in turn, it

enables children to use diverse forms of language and communication (Cristofaro & Tamis-LeMonda, 2012). Talkativeness has been equated to verbal competency (Bornstein, 1989; Harwood et al., 1999), which in turn is highly esteemed by most Western Caucasian mothers since verbal competency in young children is believed to aid children to attain individual independence and communicate personal choices, acquiescent to the individualist dimension. However, not all cultures encourage talkativeness. In comparison to American Caucasian mothers, Japanese mothers were found to place more emphasis on building attachments with their infants than to promote verbal independence in their infants (Bornstein, et al., 1990). Inuit mothers were found to be less talkative. Instead of promoting talkativeness in children, mothers focused on activities that supported their children's physical development and social learning skills (Crago, 1992). Estonian mothers were found to be less talkative in comparison to Swedish and American mothers (Tulviste, 2004).

In addition to cultural differences, mothers with lower educational levels and lower socio-economic status (SES) were observed to use less talk and less diverse sentence structures with their children (Hoff-Ginsberg, 1998; Huttenlocher et al., 2010). However, Vigil, Hodges and Klee (2005) observed that the total number of words, total number of utterances and MLU of parents of children with and without language delay was similar. In contrast, Rescorla, Roberts and Dahlsgaard (1997) found that mothers of late-talking children were more talkative with their children in comparison to mothers of typically-developing children.

#### ***1.5.4.3 Associations with children's language skills***

Several studies have shown that the type and degree of maternal verbal input influences children's talkativeness, vocabulary and sentence length (Hart & Risley, 1995; Hoff-Ginsberg 1998; Huttenlocher et al., 1991; Pan et al., 2004). In particular, mothers' quantity of talk has been shown to be strongly associated with children's vocabulary size and

development (Girolametto et al., 1999; Hart & Risley, 1992, 1995; Huttenlocher et al., 1991; Huttenlocher et al., 2002; Rowe, 2012) and predicted children's early vocabulary (Cristofaro & Tamis-LeMonda, 2012; Huttenlocher et al., 2010). In particular, Rowe (2012) found that the association between a mother's amount of talk and the child's vocabulary development was at its peak when the child was 1.5 years old, an age where word learning is exponential.

Mothers' amount of talk (quantified as number of utterances) has also been strongly associated with children's mean length of longest utterance, specifically when children's syntax skills are at an emerging level (Barnes et al., 1983). Mothers' vocabulary diversity has been positively associated with children's vocabulary size and diversity (Hart & Risley, 1995; Hoff-Ginsberg 1998; Huttenlocher et al., 1991), particularly when children are 30 months old (Rowe, 2012). In addition, mothers' lexical diversity was found to predict children's lexical diversity (Huttenlocher et al. 2010). Cristofaro and Tamis-LeMonda, (2012) found differences between mothers' ages and use of vocabulary diversity, that is, older mothers were found to use larger numbers of different words. Mothers' vocabulary diversity was positively and significantly related to child's vocabulary diversity but was negatively associated (but non-significant) with the child's MLU (Tamis-LeMonda, Baumwell & Cristofaro 2012).

In addition to vocabulary diversity, increases in maternal use of complex sentences were correlated with increases in children's use of complex sentences (Huttenlocher et al. 2002). Mothers' MLU were significantly and positively associated with children's MLUs and number of different words (Tamis-LeMonda et al., 2012). However, Girolametto et al., (1999) found that that for late-talkers there was no association between mothers (of late-talkers) use of MLUs and the children's number of utterances, vocabulary diversity and size and word combinations.

In summary, mothers' use of verbal language behaviours has been shown to be positively associated with children's language measures, and even predicted language outcomes (Barnes et al., 1983; Cristofaro & Tamis-LeMonda, 2012; Huttenlocher et al., 2010). A large proportion of the studies have been conducted with Western Caucasian mothers. Some of these studies have reported that mothers' use of verbal language was influenced by their education and socio-economic status, and their children's communicative abilities. However, there has been limited research on the verbal language behaviours of non-Western mothers and the associations between a mother's input quantity and a child's language measures within this population group.

The next section briefly describes the situation in Malaysia and New Zealand, focusing on the relevant literature related to beliefs and mother-child interaction patterns in order to establish a basis for the studies conducted in this thesis.

## **1.6 MALAYSIA**

Malaysia is a multicultural and multi-ethnic country in Southeast Asia with a total population of 28.3 million and total land area of 329,487 square kilometres (Malaysian Census 2010). Malaysia is geographically divided by the South China Sea, and consists of West Malaysia (known as Peninsular Malaysia) and East Malaysia. Nearly 80% of the population resides in Peninsular Malaysia, which contains ten states and two federal territories. Kuala Lumpur, the capital city and Putrajaya, a government administrative city lie in this region. East Malaysia, also known as Malaysia Borneo, houses the states of Sabah, Sarawak and the federal territory of Labuan (see Figure 1.3). The three main and largest ethnic groups are of Malay, Chinese and Indian origins and account for 54.6%, 24.6% and 7.3% of the total population respectively. In order to distinguish the Malay, Chinese and Indians living in other countries (for example, in Singapore, China, India) they are known as

Malaysian Malay, Malaysian Chinese and Malaysian Indian. The remaining 11.8 % of the population consists of more than 64 other cultural groups, which include the native (*orang asli*) people (from Peninsular Malaysia), indigenous cultural tribes (e.g., Iban, Bidayuh, Kadazan/Dusun, Dayak etc. [from the Borneo states], and 1.7% of the population consists of Eurasians and other people groups (Coluzzi, 2011; Goroh 2011; Malaysia Census 2010).

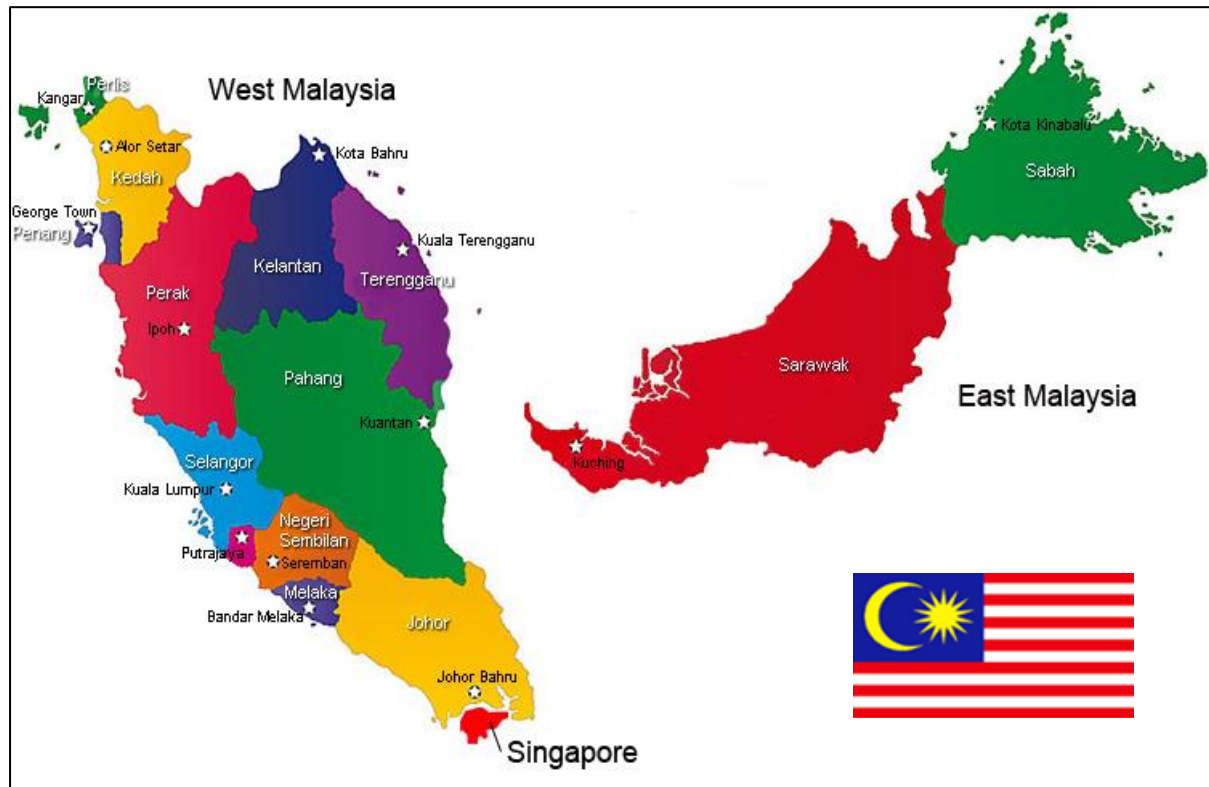


Figure 1.3 Map of Malaysia (source: [http://himaustralia.org.au/?attachment\\_id=10431](http://himaustralia.org.au/?attachment_id=10431))

Malaysia, formerly known as the Federation of Malaya, was colonized by the Portuguese (1511-1641), Dutch (1641-1824), British (1824-1944) and the Japanese (1942-1945). At the end of Japanese occupation, Britain maintained its colony for another twelve years, until the Federation was granted independence in 1957. In 1963, Singapore and the Borneo states of Sabah and Sarawak joined the Federation and the country was renamed Malaysia. However, Singapore became an independent country in 1965.



The Malaysian culture has been predominantly defined by one's ethnicity, and its society described as plural, a definition that was created by British rulers during colonial years, as posited by Milner (2003) and Noor and Leong (2013). As a result, self-identification through ethnicity is common across all spheres of Malaysian society. This includes identification in government and educational sectors, and everyday social living. The indigenous and native groups in Malaysia, along with the Malays, who are descendants of Sumatran-Palembang, Java, Patani, Johor, and Kalimantan heritage (Milner, 2003) are considered as *bumiputera* (literally translated as *sons of the soil*), and accorded positive affirmation privileges (Janssens, Verkuyten & Khan, 2015; Ong, 1990; Stevens, 2006). The Malaysian Chinese and Malaysian Indian have historical roots from Southern China and Southern India respectively, having migrated to Malaysia during Portuguese colonial rule and in greater numbers during the British rule (Milner, 2003; Ng, 1998; Noor & Leong, 2013).

Malaysia is a linguistically diverse country, that is, there are 138 living languages spoken in the nation (Lewis, Simons & Fenning, 2015). *Bahasa Malaysia* (a Malaysian form of *Bahasa Melayu* (or literally translated as Malay Language) is the official language in both the government and education sectors. English (also referred to as Malaysian English or its colloquial form, Manglish) is a widely spoken second language. Malaysian Chinese largely speak Cantonese, Mandarin, Hokkien, Hainanese, Hakka, Teochew or Fuzhou. Malaysian Indians mostly speak Tamil, Punjabi, Malayalam, Telugu or Urdu. Iban, Bidayuh, Kadazan-Dusun languages are primarily spoken by the indigenous people of Sabah and Sarawak. A handful of Eurasians (Malaysians with Caucasian ancestry) speak Malaccan Portuguese-based creole languages (Hancock, 1975). The literacy rates for individuals age 15 and above was at 94.7% in 2013 (Ministry of Education, Malaysia, 2014). The Malaysian Census (2010) reported that 62.8% of Malaysian families live within a nuclear household and 20.5% are households with extended family members. In addition, 91% of the population have had

some form of formal education, with 26.4% of the population reported to have completed tertiary education (Malaysia Census, 2010).

Malaysia is unusual in the sense that it does not appear to have a collective Malaysian culture, as it has a fusion of indigenous, tribal, Malay, Chinese, Indian, Arabic, Portuguese, Dutch and British culture of distinct civilizations and trade merchants. Each ethnic group has retained their own distinct culture, customs, beliefs, costumes, food, dance, songs, religious practices and languages (including the availability of three types of government funded schools where the medium of instruction is provided in three native languages) (Ng, 1998; Janssens et al., 2015). Families would tend to organize their parenting care and interaction according to their ethnic and religious affiliations. Article 160 of the Malaysian Federal Constitution defines a Malay as a Muslim who adheres to the Malay customs (*adat*), habitually speaks the Malay language and is of Malaysia/Singapore origin (Faruqi, 2011; Ong, 1990). As such, Malaysian Malay family values are centred around the Islamic way of life and the Malay customs that emphasize *budi* (etiquette), *akhlak* (morality), good behaviour, and respect for the elderly (Faruqi, 2011; Hossain, 2014; Hossain et al., 2005). For Malays religion and culture are intertwined and inseparable (Keats 2000). Likewise, the ethnic Chinese and Indian families, according to their respective faiths, would embrace values associated with Confucian teaching, Taoism, Buddhist, Hindu or Christian practices (Hossain et al., 2005).

In general, Malaysian values parallel other Asian countries, that is, these are rooted in a collectivist culture where families are interdependent and traditionally hierarchical and patriarchal (Baskaran, 2000; Gomez & Suhaimi, 2014; Hossain, 2014; Lian & Abdullah, 2001). Fathers take on the significant role of a provider, protector, authority figure and decision-maker in the family, including aspects concerning family and child-rearing practices. Children are expected to conform to family expectations, to demonstrate

submissive behaviours, modesty, politeness and filial piety, and obey and respect both parental authority and elders. Parents enforce strict discipline as a means of showing their love, care and responsibility in nurturing the child. In return, children are expected to show love and care for their parents by obeying and listening to them, and demonstrating ‘good behaviour’ (Gomez & Suhaimi, 2014; Hossain, 2014; Hossain et al., 2005; Keats, 2000; Lian & Abdullah, 2001; Stivens, 2006; Tan, 2010). Saraswathi and Pai (1997) captured the parenting patterns of Malaysians by describing them as a traditionally “strict father and kind mother” style. Questioning or challenging parental advice is detested and signals disobedience, rudeness and ‘bad behaviour’ (Chan & Chen, 2011). Like other Asian cultures, children are nurtured to depend on the family, and how children grow-up is a reflection of how well their parents have raised them. Bonding between parents and children is encouraged from an early age and is seen to be vital for present-day survival and for the future, where children are expected to take an active role in caring and providing for their elderly parents (Stivens, 2006). Mothers are the primary caregivers and are largely responsible for nurturing their children and are highly involved in the day-to-day care of children (Hossain et al., 2005).

In contrast to the other Asian cultures (including Malaysian Chinese and Malaysian Indian), Ong (1990) reported that Malaysian Malays do not prefer to live with extended families. Malay *adat* stipulates that the father is required to gift his son with a property upon marriage to enable him to live independently with his wife and start a new household. However, given that Ong’s field study was conducted in Kuala Langat, a rural village in the Selangor state of Malaysia, where several properties are built on vast family land (usually owned by several family members of the same clan), it is not known if this custom is practiced in urban areas where land cost and availability might be an issue.

Elders, grandparents and parents are highly respected. Children are expected to greet older persons and elders (both family and non-related adults) using kinship titles. For example, a three year old would be taught to greet an adult (e.g., a neighbour) by using the term “Aunty (first name)” or “Uncle (first name)”. The adult’s older children would be greeted using *Kakak* or *Jie-jie* or *Akka* (for a female) and *Abang* or *Ge-ge* or *Annae* (for a male). The italics are literally translated as sister and brother in Bahasa Malaysia, Cantonese and Tamil. Children are taught to express politeness and respect through proper greeting terms and in conversations. Children are not expected to be intrusive or be physically present in the same room where adults are conversing with each other (Chan & Chen, 2011).

In their exploratory study of 21 Malaysian mothers with pre-schoolers, Hewitt and Maloney (2010) found that Malaysian mothers indicated a preference for their children to learn formal academic activities (e.g., phonics, alphabet, mathematics, etc.) to enhance their learning experience. The mothers viewed child-orientated play-type activities (e.g., sand play, toy play, water play, etc.) as “a waste of time” for their children in preschool. Some of the mothers felt that free play was not compatible with the pre-schoolers’ age, whilst others felt that such play was more appropriate at home. These mothers emphasized other learning experiences for their children (e.g., discovering nature, story-telling, art, etc.) for their children rather than free play. The authors postulated that the mothers’ view could be attributed to either a lack of understanding in the developmental benefits of play or a forthright dismissal of play as a learning benefit. Although the authors sought mothers’ perceptions within the context of early childhood education in Malaysia, the studies undertaken in this thesis may be able to offer some insight if mothers views were any different within the home environment.

Similar to non-Western cultures and beliefs (as outlined in Section 1.4.3), disabilities in Malaysia are viewed from religious and fatalistic lens (Baskaran, 2000; Othman, 2010).

Perseverance to endure the disability as a fate and a challenge in life, with or without medical intervention, is valued in some Malaysian families. As a result, parents may overly protect and care for the child and focus less on developing a child's skills (Othman, 2010). Consequently, parents may not pursue or may delay accessing therapy services for their children (Lian & Abdullah, 2001), even although professionals are seen as experts (Baskaran, 2000). In her study that explored the attitudes and motivation towards speech and language disorders, Baskaran (2000) discovered that 55% of the Malaysians in her sample would "leave it in the hands of God" and 45% "leave it in the hands of professionals" when asked about motivation in seeking help and intervention for their child (p. 174). In some instances, consultations and treatment with traditional medicine men or spiritual healers (e.g., shamans, *bomoh*, 'holy men'), and use of herbal and alternative medicine, cleansing rituals, and offerings are undertaken in order to reverse or minimize the impact of disabilities (Chew, Tan & Ooi, 2011; Laderman, 1996).

## **1.7 NEW ZEALAND**

New Zealand (NZ) is an island country located in the South Pacific with a total land area of 268,021 square kilometres and geographically consists of mainly the North Island and South Island (as displayed in Figure 1.4). The former houses the capital city, Wellington. The total population is approximately 4.2 million, of whom 74% identified themselves as of European ethnicity, 14.9% Māori, 11.8% Asian, 7.4% Pacific peoples, 1.2% Middle Eastern/Latin America/African, and 1.6% of other ethnicities (New Zealand Census, 2013). Census participants were able to indicate more than one ethnicity.

New Zealand has a distinct culture that can be traced to its first inhabitants, the Māori, who had Polynesian roots and settled in the country in 1250-1300 CE (Howe, 2008). The

Europeans (primarily from Britain) settled in the country in the early 19th century (Howe, 2008; Sinclair, 1980).

Recent government migration policies have resulted in the arrival of other ethnic groups, making New Zealand an increasingly diverse country (Nayar, 2011). With more than a million of its population born overseas, the New Zealand Census in 2013 reported that the country's total number of ethnicities exceeded the total number of countries in the world (New Zealand Census, 2013). Although English is the most common spoken language (96.1%), 18.6% of the population speak more than one language; these include Māori (3.7%), Samoan (2.1%) and Hindi (1.6%) languages (New Zealand Census, 2013). English, Te Reo Māori and NZ Sign language are the nation's official languages. Adult literacy was reported at 99%, while 79.1% of the population held formal qualifications (20% of whom have qualifications of a bachelor's or higher degrees) (NZ Census, 2013). In essence, New Zealand is considered a bicultural country, embracing both Māori customs, values and heritage (as affirmed in Treaty of Waitangi), and European values that are strongly tied to British heritage (Crespo, Kielpikowski, Pryor & Jose, 2011). The increasing numbers of Asian and Pacific peoples who have made New Zealand their home have changed the cultural landscape of the country, making it a progressively growing multicultural and diverse nation (Sibley & Ward, 2013; Singham, 2006).

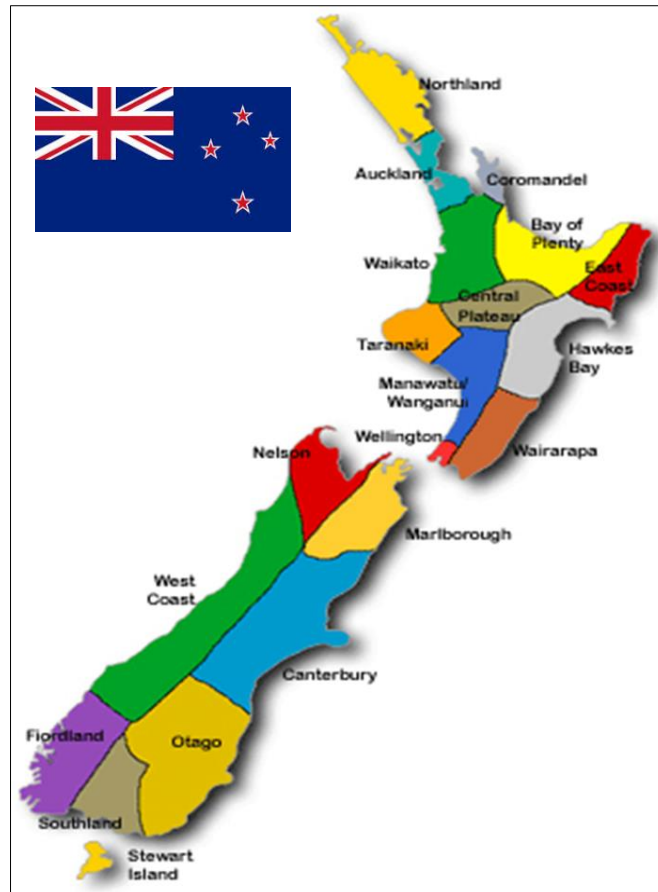


Figure 1.4 Map of New Zealand

(Source: <http://www.advicefinancial.co.nz/Portals/0/nzmap.gif>)

The specific beliefs and practices related to mothers' interaction patterns with young children in New Zealand are currently unknown. However, given that New Zealand European mothers have British roots, and are more likely to incline toward the individual independence dimension (Hanson, 2011), one can expect New Zealand mothers of European ancestry to adopt similar beliefs and practices to those of Western Caucasian mothers. New Zealand mothers of Māori heritage have been known to subscribe to beliefs and engage in mother-child interaction patterns that are similar to non-Western cultural and Polynesian groups, that is, leaning towards the collectivist-interdependence dimension (Schoeffel and Meleisa, 1996).

Having expounded on the selected literature that considered mothers' beliefs and practices related to mother-child interactions in a variety of cultures, including specific

cultural groups living in Malaysia and New Zealand, the section will briefly describe the various language learning and interaction models. The subsequent sections will provide the reader with some insight on the current challenges of implementing language intervention programs with culturally diverse populations.

## **1.8 LANGUAGE LEARNING AND INTERACTION MODELS**

### **1.8.1 Tuitional model in language learning**

Asian mothers who employ adult-centred *directive* interaction patterns appear to be adopting the tuitional model of language learning (Burns & Radford, 2008; Lasky & Klopp, 1982). The tuitional model refers to the adult's use of explicit instructions and direct modelling, and corrections with their children. For example, for direct modelling, the adult may say to the child, "Say 'throw the ball'", "Say, 'hi mummy'" and "Can you say 'book'?" For corrections, the mother says "car" when child says "ta" (Lasky & Klopp, 1982). Apart from these descriptions, and Burn and Radford's use of tuitional modelling variables in their study, there appears to be limited information regarding this model in the literature.

### **1.8.2 Intentionality model in language learning**

Western mothers who use child-centred *facilitative* interaction patterns appear to be adopting the intentionality model in language learning (Bloom, et. al., 2001). The underlying notion of this model is that the child already knows part of the information/word meaning in his or her intentional state of mind, that is, the child has the intentions to communicate but requires the adult to facilitate his or her *intentions*. Hence the child is seen as the principal *driving force* for language learning and the caregiver functions as a facilitator to *draw out* the child's intentions (Bloom et. al., 1996; Bloom et al., 2001). The caregiver is expected to use



child-centred interaction patterns, for example, interpretation, expansion, imitation, etc., to extract and reinforce the child's intended utterances. The child is then expected to initiate communications and following this, the caregiver in turn is expected to respond in a meaningful way, whilst maintaining balanced turn taking and reciprocity in the communication. As the goal of the interaction is to reinforce shared meanings, the caregiver does not *teach* or instruct the child to learn words (Bloom, et al., 2001).

### **1.8.3 Social interactionist model of language acquisition**

This model (Bohannon & Bonvillian, 1997) posits that the scope and type of interaction patterns that mothers use with their children will influence the child's language skills. Language is believed to be facilitated when there is a match between the caregiver's language input and the child's own skills, that is, within the child's zone of proximal development (Vygotsky, 1978). The model emphasizes mothers' use of interaction and verbal patterns that promote reciprocal and responsive communication in children in order to develop their communication and language learning skills. These verbal and interaction patterns include utterances that are simple, child-centred, and that elicit conversations and model language, for example, by using expansions, descriptions, commenting, imitations, following child's lead, balanced turn-taking (Girolametto et al., 1999; Girolametto & Weitzman, 2002). These attributes form the core elements of various language intervention programs used by SLTs to both directly work with children and to train parents to use these interaction patterns with children with language difficulties. Some of these programs include The Hanen Parent Program (e.g., It Takes Two to Talk) (Manolson, 1992; Pepper & Weitzman, 2004), Enhanced Milieu Teaching (Hemmeter & Kaiser, 1994; Kaiser & Hancock, 2003), Transactional Intervention Program (TRIP) (Mahoney & Powell, 1988), and Responsive Interaction Strategies (Kaiser, Hemmeter, Ostrosky, Fischer, Yoder & Keefer, 1996; Kaiser

& Hancock, 2003). As outlined in Section 1.5.1, the studies show that mothers who use the Social Interaction Model's verbal interaction patterns when conversing with their children seem to help children achieve positive gains in their language measures.

#### **1.8.4 Application of language learning and interaction models**

Traditionally, researchers have been cautious in recommending culture-specific language learning models for children from different cultural backgrounds. Specifically, researchers have advised caution in assuming how children learn language and in the use of culture-specific language learning models as a yardstick to measure and subsequently teach language skills (e.g., Hwa-Froelich & Westby, 2003; van Kleeck, 1994; Vigil & Hwa-Froelich, 2004). Therefore, SLTs who have been professionally trained to use Western-based theoretical models in intervention work may face challenges in implementing 'Western-based' verbal and interaction patterns when working with non-Western families. In today's increasing multicultural countries and plural societies, SLTs may encounter clients from a number of different cultural groups.

Pickering and McAllister (2000) stated that most SLTs, irrespective of their cultural or geographical origins, are already providing cross-cultural service delivery. However, the authors acknowledged that the diversity across cultures has brought immense challenges in service delivery, especially in aspects related to the professional's own personal viewpoints and patterns of interactions. Although the above authors, and Pickering (2003) provided ways to consolidate one's own personal viewpoints and interaction behaviours when delivering intervention, the increasing diversity in beliefs and practices across cultures and the application of culture-specific evidence-based intervention programs with multicultural populations may not only be peppered with complexity but may also bring about challenges. This then raises the question of how SLTs can navigate belief systems in order to deliver a

culturally competent service for diverse populations. In order to answer this question, existing challenges and guidelines in delivering culturally competent services are briefly described in the next section.

## **1.9 WORKING WITH MULTICULTURAL POPULATIONS**

### **1.9.1 Current challenges**

Irrespective of the geographical and cultural landscape, SLTs inevitably encounter challenges when working with families from diverse cultural backgrounds. These challenges include language barriers, availability of assessment materials and standardized tests in particular languages, access to interpreters, services, and issues surrounding family dynamics and implementation of language intervention programs (e.g., Fung & Roseberry-McKibbin 1999; Kohnert, Yim, Nett, Kan & Duran, 2005; Law, 2000; Mennen & Stansfield, 2006; Pappas, McLeod, McAllister & McKinnon, 2008; Peltier, 2011; Southwood & Van Dulm, 2015).

This thesis addresses particular issues pertaining to family dynamics and service delivery, that is, knowledge of cultural beliefs and practices related to mother-child interactions and application of language intervention programs with culturally diverse populations. The recommended use of verbal and interaction patterns with populations who have different interaction practices and expectations may cause confusion, misunderstanding and insensitivity during the intervention process and may result in frustration (for both service provider and the family), and termination of the intervention program (Chan & Chen, 2011). The American Speech-Language and Hearing Association (ASHA), a professional association that governs SLTs (or Speech-Language Pathologists (SLPs) as they are known in

America) has a number of position papers that recommend best practices when working with culturally and linguistically diverse groups and these are briefly outlined in the next section.

### **1.9.2 Current SLT guidelines for implementing language-intervention programs**

ASHA underscores the need to deliver a culturally competent service. This includes for clinicians to not only ‘understand, protect and respect’ individual’s beliefs and values but also to be aware of one’s own cultural biases and presumptions (ASHA, 2005). These papers emphasized the need and way to develop cultural competence in specific SLT subject areas. In addition, ASHA (2010) has developed a cultural competence checklist for SLTs, to be used prior to starting the intervention (for individual reflection and awareness), during service delivery (for continuous reflection) and for the respective establishments that the SLTs work with (for possible impact of procedures and policies on service delivery).

Pickering (2003) highlighted the need to abandon individual ‘ethnocentrism’ and exercise care when adopting a ‘Western universalist approach’ when working with culturally diverse families. The author advocated the concept of ‘multidimensionality’, that is, to move away from interpreting perspectives from one particular dimension, a dimension that one is comfortable with or has experience with, and view the other person’s perspectives in order to develop culturally sensitive practices.

Specifically related to cultural attributes in parent-child interactions, van Kleeck (1994) suggested the use of interview, checklists and observation of parent-child interactions to ascertain the interaction patterns of the particular family and their underlying beliefs. In addition, van Kleeck (1994) proposed that the SLT could either (a) implement the same mainstream parent-based program, (b) create a new program to match the family needs or (c) tailor the mainstream program to suit the family.

Drawing upon the work of van Kleeck (1994), Pickering & McAllister (2000), Pickering (2003), Johnston and Wong (2002), Simmons and Johnston (2007) and other related literature, the thesis attempts to extend suggestions made in existing studies into an empirical-based study that explores both reported beliefs and practices, and interaction practices related to mother-child interactions within a multicultural setting.

### **1.10 STATEMENT OF THE PROBLEM**

Research on cross-cultural belief systems and caregiver-child interaction patterns provides valuable information to assist families, service providers and researchers in the understanding and implementation of theoretical language learning models and language intervention programs with culturally diverse populations. Cultural belief systems form the macrosystem environmental layer of an ecological systems model that will inevitably influence the daily interactions of mother and child at the microsystem layer (Bronfenbrenner, 1986). Belief systems and mother-child interaction patterns are intricately connected to one another and vary across cultures. Whilst these differences have been examined in various cultural groups by using different methodological approaches, there appears to be a gap in what is known and how to implement what is known within a language intervention context. This is because most language intervention programs have adopted and embedded the use of verbal and interaction patterns that have been derived from and are specific to one cultural group. Published literature to date indicates that most evidence-based programs are based largely on studies of Western Caucasian mothers from English-speaking countries. Studies of Asian populations are sparse and are largely focused on migrant populations in Western countries (e.g., Johnston & Wong, 2002; Simmons & Johnston, 2007).

Currently, there are no known published empirical-based studies that have specifically examined mother's inherent belief systems, their talk and interaction patterns with young children both in Malaysia, a multicultural country, and in New Zealand, a growingly diverse country. In addition, maternal use of child-centred interaction ('facilitative') patterns has been shown to be positively associated with children's language measures. However, the use of adult-centred ('directive') interaction patterns has primarily demonstrated negative correlations with children's language measures. Given that existing literature indicates that non-Western mothers prefer using a more direct, instructional/teaching interaction pattern with their children, can we then assume these mothers have been interacting in a non-optimal way with their children? Observational research with non-Western cultures, in particular Asian communities, is scarce. One acknowledges that it is impossible to know everything about every culture, especially when culture is constantly evolving, and that diversity may exist across and within cultures. Moreover, it may not be feasible to develop an evidence-based language intervention program that is culture-proof. This exploratory research thesis, consisting of two studies, adopts a quantitative and qualitative approach to examine beliefs and practices by using survey and observational methods, in order to understand *'how and why parents do what they do'* (Bornstein & Cheah, 2006). In the absence of evidence-based language intervention programs specifically tailored to Asian populations' different interaction patterns, the thesis, drawing from the findings of the two studies, attempts to propose specific guidelines to circumnavigate cultural belief systems in order to deliver evidence-based language intervention programs across diverse populations. In addition, the research aims to form a basis for future studies with mothers of children with communication difficulties in Malaysia and New Zealand.

## **1.11 THESIS AIMS AND RESEARCH QUESTIONS**

The overall aim of the thesis was to examine the reported cultural beliefs and practices related to early mother-child interactions in a sample of population residing in Malaysia and New Zealand. In addition, the interaction patterns of Malaysian mothers when interacting with their children were observed in order to examine mothers' verbal and interaction behaviours and to determine differences between three ethnic groups. Further to this, the relationship between specific measures of Malaysian mothers' verbal productivity and interaction behaviours with children's verbal productivity were examined.

### **1.11.1 Study One: Reported Beliefs and practices related to mother-child interactions among Malaysian and New Zealand mothers**

The first study, a survey (Chapter Two), aimed to identify the beliefs and practices related to mother-child interactions in Malaysia and New Zealand. The specific questions asked in this study were:

1. What are the differences and similarities in the reported beliefs and practices related to mothers' verbal and interaction patterns with their young children among Malaysian and New Zealand mothers?
2. What are the differences and similarities in the reported beliefs and interaction patterns among the three Malaysian cultural groups examined in this study?

### **1.11.2 Study Two: Observed mother-child interaction behaviours among Malaysian mothers**

In order to observe visible cultural values (Hofstede, 2001), a second study, consisting of observational research (Chapter Three) was developed. This study aimed to discover if there are differences in mother-child interaction patterns among three Malaysian cultural

groups and to determine the correlations between the mothers' verbal and interaction behaviours and children's language measures across groups. The specific research questions asked in this study were

1. What verbal and interaction behaviours do Malaysian mothers use when interacting with their young children and do these differ across the three ethnic groups examined?
2. What is the relationship between
  - a) measures of mothers' and children's verbal productivity?
  - b) measures of mothers' interaction behaviours and children's verbal productivity?



## CHAPTER TWO

---

### Study One:

#### Reported Beliefs and Practices Related to Mother- Child Interactions among Malaysian and New Zealand Mothers

## **2.1 AIMS OF THE PRESENT STUDY**

The purpose of this study was to examine the reported beliefs and practices related to mothers' verbal and interaction patterns with young children in Malaysia and New Zealand.

The specific research questions are:

1. What are the differences and similarities in the reported beliefs and practices related to mothers' verbal and interaction patterns with their young children among Malaysian and New Zealand mothers?
2. What are the differences and similarities in the reported beliefs and interaction patterns among the three Malaysian cultural groups examined in this study?

## **2.2 METHODS**

### **2.2.1 Ethical considerations**

The research procedures were reviewed and approved by the University of Canterbury Human Ethics Committee (2012/65). The ethics approval letter is attached in Appendix A. All participants indicated consent prior to participating in the study.

### **2.2.2 Research design**

A comparative cross-cultural approach (Aneas & Sandín, 2009) was adopted to understand differences and similarities across the selected cultures (between distinct cultures, i.e. Malaysian and New Zealand; and between the Malaysian subgroup, Malaysian Malay, Malaysian Chinese and Malaysian Indian). A survey tool, in the form of a self-administered questionnaire, was used to examine beliefs and practices related to parent-child interactions across the cultural groups. The survey was created in English and Bahasa Malaysia to increase number of participants. A questionnaire can potentially generate a large sample size from diverse populations in a systematic, resourceful, sensitive and cost effective manner.

Check and Schutt (2012) stated that a survey was the “only means for developing a representative picture of attitudes and characteristics of a large population” (p.160). As a survey can be distributed widely, the occurrence of sampling bias is minimized, thus increasing generalizability of findings (Check & Schutt, 2012). Surveys allow individuals to provide responses non-intrusively, without the presence of researchers and with anonymity, in a location and time that is convenient to them.

Surveys are not without errors and may result in a biased or inappropriate response when questions/statements do not measure the intended construct. Attention to measurement, overall design and sampling of the survey is required to minimize errors in survey research. Groves (1989) highlighted two measurement errors that could occur in survey research, errors of observation and errors of non-observation. The former refers to inaccurate measurement of cases that are quantified in the survey. The manner in which question or statement are worded and presented may hinder the accurate measurement of the intended concept. For example, questions or statements that are leading, of inappropriate length, or those that contain double negatives, and ambiguous language can potentially create outcome errors. The overall design, appeal and length of survey could influence the quality of responses and the number of respondents who participate in the study. In addition, the researcher’s bias (e.g., personal beliefs and experiences) and respondent characteristics (e.g., giving socially correct responses, tendency to ‘agree’, etc.) may further contribute to measurement error.

Errors of non-observation refer to exclusion of cases that should be observed. Check and Schutt (2012) explained these errors stem from sampling process and non-response to specific questions on the questionnaire, the latter of which can affect generalizability. The authors cautioned the possibility of chance occurrence when sampling respondents who are different from the population.

The use of a survey on populations with diverse language, culture, religious and belief systems requires particular considerations in design and language choice of questionnaire. Check and Schutt (2012) pointed out the need for all survey respondents from diverse groups to have the same reference point or meaning to the given questions or statements (to ensure uniformity). The authors explained that not only does the question or statement need to generate the 'same meaning across different population subgroups' (pg.180) but the construct tested (or words used) must be comparable across the groups. The language (or languages) chosen to construct the questionnaire for use with bilingual or multilingual populations, especially when English is not the native language, requires careful consideration. The translation of questions or statements into another language poses an additional burden of retaining identical meaning to the construct investigated in the targeted languages.

The possible occurrence of these kind of errors in the current study is recognized and acknowledged. This study attempted to minimize errors by carrying out two steps. First, the questionnaire in this study was adapted with permission from authors of two similar studies to minimize errors associated with validity and reliability, and to report comparisons. Secondly, some of the statements and questions on the questionnaire were either revised or added to reflect the targeted population for this study. The protocols employed by Johnston and Wong (2002), and Simmons and Johnston (2007) when devising and translating questionnaires were followed. These included forming a panel of experts (cultural informants), piloting the questionnaire with several individuals similar to those in the target population, and conducting one hour of face-to-face interview with some of these individuals to ensure uniformity in meaning, vocabulary and other issues. Recommended changes were implemented and the panel of experts were consulted again prior to the recruitment process.

### **2.2.3 Instrumentation: Survey development**

**Survey construction.** The survey items were adapted from two studies, that is, Johnston & Wong (2002) and Simmons & Johnston (2007) with permission from Professor Judith Johnston (approval granted via email on 3<sup>rd</sup> June 2012) and Dr Noreen Johnston (on 30<sup>th</sup> May 2012). The authors developed their written surveys in consultation with representatives from the cultural groups they had specifically examined in their respective studies. This study followed the procedures laid out by these authors to ensure that the modified survey was compatible with the four cultural groups that were examined. These procedures are explained in the next section.

**Selection and construction of survey items.** Johnston and Wong (2002) utilized a 30-item survey to identify differences in Chinese and Western mothers living in Canada. Simmons and Johnston (2007) used a 36-item survey to identify differences in Indian and Western mothers, also living in Canada. Although individual heterogeneity within cultures can be expected (Matsumoto, 2006), most Chinese, Indian and Western cultures are believed to share similar values and heritage irrespective of their geographical locations (Hanson, 2011; Jacob, 2011; Jose et al, 2000; Kagitcibasi, 2005; Kakar & Kakar, 2007; Nayar, 2011; Ng et al., 2013). As such, it was considered appropriate to select some of these survey items for use with the Chinese and Indian cultural groups living in Malaysia and for the New Zealand Europeans living in New Zealand. Several other survey items that reflected common cultural practices and those that matched the study's overall objectives were added. Aspects relating to survey construction, for example, sentence length, wording, use of double-barrelled questions, negatives, layout, etc. were considered with reference to relevant literature (Check & Schutt, 2012; Dillman, 2000; Fink, 2006; Groves, 1989; Sue & Ritter, 2013). Boynton and Greenhalgh (2004) cautioned that "instrument developed in a different time, country, or cultural context may not be a valid measure in the group you are studying"

(p. 1313). As a result, *cultural informants* were consulted to ensure that the cultural meaning and sensitivity of a given sentence was compatible and appropriate across the four cultural groups. Once the survey items were selected and additional items were constructed, a questionnaire that contained 44 belief statements, 33 practice statements and 32 demographic questions was drafted. This draft was labelled Draft Questionnaire #1 and was discussed with eight individuals who functioned as cultural and academic informants.

**Cultural and academic informants.** These individuals were known to the author and were selected based on their familiarity and expert knowledge in at least one of the four cultural groups. They included two senior and currently employed Speech-Language Therapists (SLTs) who are of New Zealand European heritage. Both SLTs have more than 30 years of individual work experience, one exclusively in New Zealand (NZ) and the other both in NZ and Malaysia. The latter has worked with diverse cultural groups in Malaysia for ten years and is fluent in Bahasa Malaysia and conversational Tamil. She is also a mother of three grown up children who are bicultural (Malaysian and NZ heritage). In addition, three Malaysian mothers of Malay, Chinese and Indian ethnic origins were consulted. They were a PhD student at the University of Canterbury, a mother who had recently migrated to New Zealand and a former principal of a multicultural preschool in Malaysia (now working as a preschool teacher in Christchurch). One retired grandmother of NZ European heritage who had previously worked in South East Asia and who was caring fulltime for her 4-year old grandchild at the time of the study was also consulted. Two academics with expert knowledge on child language provided their viewpoints.

With the exception of the two academics, each of these persons was engaged in individual discussions with the author for between one to two hours. They were asked about their views on parent-child interactions within their respective cultures and the cultural expectations concerning verbal and interaction behaviours with young children. The objective

of the study was briefly explained to them. Following this, each person was given a copy of Draft Questionnaire #1 and was asked to identify any statements/questions that might be potentially offensive or sensitive and ambiguous, both culturally and linguistically. Suggestions to include new survey items were considered. The viewpoints, comments and suggestions of all six individuals were gathered, consolidated and discussed with the two academics. Changes were made and 66 survey items were selected. These items consisted of 33 belief and 33 practice statements. The rationale for inclusion in the study was listed and drafted into what was labelled as Draft Questionnaire #2 for the pilot study. This draft consisted of 27 belief statements, 27 practice statements and 27 demographic questions.

**Pilot study.** The aim was to evaluate the appropriateness of the survey items for use with the Malaysian mothers of Malay, Chinese and Indian heritage and Western mothers with young children. In particular, this process served as a tool to ascertain the trial participants' understanding, clarity and shared meaning of the survey items. In addition, the pilot study elicited trial participants' feedback on wording and length of the survey, on potentially offensive, sensitive, embarrassing, irritating and confusing items, and for suggestions on rewording, exclusion or new inclusion of survey items.

Sixteen mothers with young children were recruited in the pilot study. Four mothers represented each of the four cultural groups (NZ European, Malaysian Malay, Malaysian Chinese and Malaysian Indian), and were all residing in Christchurch at the time of the study. However, only fourteen mothers completed the pilot survey. Two Malaysian mothers of Malay heritage withdrew from the study due to busy schedules. The Malaysian mothers who took part in the study comprised of five full-time students (at the University of Canterbury), four full-time mothers and one working mother, all of whom were in New Zealand for less than 2 years. Three New Zealand European mothers who were in full-time employment and one stay-at-home mother also took part in the study. The mothers completed a paper version

of Draft Questionnaire #2. Following this, a written or verbal feedback on the length, ease of use, content and other aspects of the Questionnaire was solicited from the pilot participants.

While not examined statistically, the findings of the pilot study were similar to result obtained by Johnston and Wong (2002), and Simmons and Johnston (2007). In particular, there were differences between the Asian and Western Caucasian group. The trial participants' response on the survey items (for example, tendency to mark 'agree' or 'neutral' on the statements, highlight of ambiguous statements and questions, multiple or no answers, etc.) were considered along with their comments and suggestions. Revisions to the survey were made in consultation with the two academic scholars. This resulted in Draft Questionnaire #3 that consisted of 30 belief statements, 30 practice statements and 28 demographic questions.

**Survey translation.** The survey, initially created in English, was translated into Bahasa Malaysia (BM) by the author, who is fluent and literate in Bahasa Malaysia. A trained teacher, a fluent native speaker of Bahasa Malaysia (who was studying for a PhD at the University of Canterbury), scrutinized the translated version's grammar, wording, double meanings, suitability of vocabulary used and cultural sensitivity. Both the author and the native speaker collaboratively discussed the changes, viewed the English version to maintain original meaning, and implemented the appropriate corrections on the spot. Following this, the author back-translated the entire BM survey and contrasted it with the original English versions as a whole. Some minor differences were apparent in both the languages and the appropriate revisions were executed to achieve consistency in meaning and language. These changes were reflected in both paper and electronic versions of the survey. The survey instruments used in Malaysia and New Zealand were identical.

**Construction of web survey.** Web surveys maximize the number of survey respondents and facilitate ease of use for those who have an internet connection (Check &



Schutt, 2012). A web survey was used because of its capacity to reach the wider population, thus maximizing the capability to obtain a large sample size. Draft Questionnaire #3 was created on Qualtrics website page in both English and Bahasa Malaysia languages with filters, drop-down menus, and attention to font size, display and overall layout. Seven individuals, including the research supervisors, tested the web-page link to ensure the survey was link easy to access and use. The web survey could only be accessed with a unique password for each respondent. Dillman (2000) reiterated the need to control web surveys in this manner to minimize biased sampling. The participants could choose to complete the survey in either English or Bahasa Malaysia.

**Finalized survey.** The written questionnaire contained 60 statements related to belief and practices in parent-child interactions. The first 30 items asked mothers to rate their level of agreement on statements regarding their beliefs related to verbal and interaction patterns with their children. These belief survey items were categorized into seven themes concerning intentionality, value of talk, ways children learn, emphasis in children, ways parents talk with children, status of interaction, and values concerning children and disabilities. The level of agreement was rated using a 5-point Likert scale, that is, strongly disagree, disagree, neutral, agree and strongly agree. The next 30 items asked mothers to indicate the frequency (i.e., hardly ever, sometimes, very often, almost always) with which they carried out various interaction practices while talking with their children. These practice survey items were categorized into four themes, that is, language-modelling and conversation-eliciting utterances, and, behaviour- and response-control utterances, play with toys and materials used to aid word learning. In addition, the demographic section elicited relevant information about participants and their family members, which included the child's language skills, number of family members, mother's occupation and education level, language use and other related

information. The majority of these questions were close-ended with a number of response choices. The final version of the Questionnaire is in Appendix B.

#### **2.2.4 Participants**

The study initially aimed to sample participants from four groups: Malaysian mothers of a) Malay, b) Chinese and c) Indian ethnicities and d) Western mothers of European and American heritage residing in Malaysia. Most existing studies of cultural differences in parent-child interactions recruited Western participants from either the American or European continent (Lamm et al., 2014; Simmons & Johnston, 2007; Vigil, 2002). The recruitment of Western populations within an Asian country was intended to examine the possible influence of Asian cultural ideologies on existing Western belief systems and interaction patterns (who lived primarily in Western countries). However, the total number of Western participants recruited in Malaysia, was deemed too small ( $N = 12$ ) to make comparison. As such, their data was excluded in the final analysis. Instead, Western mothers residing in New Zealand were recruited for the study. The participation criteria was mothers a) who have children between 2-4years old at the time of study, b) who are residing and raising their children in either Malaysia or New Zealand and c) are of Malaysian or New Zealand (European descent) origin. In addition, literacy in either English or Bahasa Malaysia was required in order to complete the questionnaire. The rationale for selecting the cultural groups, language characteristics and caregiver and child categories for the study is provided below.

**Cultural groups.** The participants in the study were recruited from the three largest ethnic groups in Malaysia, that is, Malaysian mothers of Malay, Chinese and Indian heritage and New Zealand mothers of European Caucasian heritage living in New Zealand. Participants' cultural groups were determined by their self-reported ethnicity in the survey research. The participants from Malaysia were referred to as *Asians* and the participants from

New Zealand as *Westerners*. These two groups of participants were included in this study as there has been no documented evidence with these population samples even though the literature reported that the belief systems and interaction patterns between Asian and Western groups are distinct (Crago, 1992; van Kleeck, 1994). Participants were recruited from Malaysia and New Zealand. Given the author's ready networks and familiarity with the cultural landscape in these two nations, participant recruitment was expected to be feasible.

**Language.** Only English- and Bahasa Malaysia- (the national language of Malaysia) speaking participants were included in the study. English is recognized as the most common language in New Zealand and is spoken by 96.1% of the population (New Zealand Census, 2013). Bahasa Malaysia (BM) is the official language and the medium of instruction in all national schools in Malaysia. English is widely spoken and is taught as a second language in all schools in Malaysia. The literacy rate in Malaysia is 94.7% (Ministry of Education, Malaysia, 2014). The study included BM and English speaking individuals to obtain a representative sample and to increase participation rates. The different variations of the English language, for example, Malaysian English, New Zealand English or American English were not considered in recruiting participants for this study.

**Caregiver and child.** The term *caregiver* in this study refers to mothers. The literature recognizes differences in interaction patterns of mothers and fathers with their children (Leech, Salo, Rowe & Cabrera, 2013; Pancsofar & Vernon-Feagans, 2006). Given the existing variations in mothers' and fathers' language input, only mothers were selected to ensure uniformity and comparability with similar past studies. The term *child* refers to typically-developing toddlers between the chronological ages of 24-59 months. Toddlers in this age group were chosen, as the literature documented distinct verbal and interaction behaviours of mothers with young children within Asian and Western (Bornstein & Cheah, 2006; Rogoff et al., 1993; McCollum et al., 2000). In addition, mothers of children with

speech, language and communication difficulties were excluded from the study as there are documented differences in verbal and interaction patterns between mothers of typical and atypical developing children (Conti-Ramsden, 1990; Girolametto et al., 1999; Santos & McCollum, 2007). This study aimed to document information regarding the beliefs and practices related to talk and interaction patterns of mothers with young children with typical speech, language and communication development in order to establish a reference point for future studies with mothers of young children with atypical skills in Malaysia and New Zealand. Given the absence of standardized speech and language assessments in Malaysia, mothers' report (of their child's developmental skills) on the questionnaire was considered as a valid measure of the child's language skills. Law and Roy (2008) asserted that whilst parents may either underrate or overrate their child's language skills, parental report tends to provide a realistic and functional estimate of the child's day-to-day language skills.

All individuals who took part in the study were volunteers who indicated their interest and eligibility in the study. This method of sampling, known as convenience sampling, has been acknowledged to attract participants who are not representative of the given population in the study (Fink 2006; Sue & Ritter, 2012). An attempt was made to minimize this bias by ensuring that in Malaysia, the three largest cultural groups were adequately represented in the study. In addition, both English- and Bahasa Malaysia- speaking participants were targeted. The participants were recruited from different organizations, and a mixed mode survey (paper and electronic survey) was used to draw a wider and varied population.

### ***Demographic data***

The demographic data that emerged from the surveys provided contextual information about mothers and their respective families. Table 2.1 displays demographic characteristics of the mothers who participated in the study. The subsequent sections report descriptive

statistical analysis of Malaysian and New Zealand mothers' demographic information in six areas (a) mothers' age, children's age and gender, (b) occupation, (c) maternal education, (d) languages, (e) hours spent talking with children per day, and f) family size.

Table 2.1

*Demographic Data for Mothers' Characteristics as a Percentage\* of the Group*

Variable	Malaysian mothers		New Zealand mothers	
	%	(Total N)	%	(Total N)
Group N		(199)		(85)
Age				
20-29	12.0	(24)	6.0	(5)
30-39	76.0	(152)	76.0	(65)
40-49	12.0	(23)	18.0	(15)
Marital status				
Married	98.0	(195)	99.0	(84)
Single <sup>a</sup>	2.0	(4)	1.0	(1)
Occupation <sup>b</sup>				
Level Four	33.7	(67)	40.0	(34)
Level Three	25.1	(50)	6.0	(5)
Level Two	16.6	(33)	6.0	(5)
Level One	0	(0)	0	(0)
Stay-at-home mother	20.6	(41)	48.0	(41)
Did not state	4.0	(8)	0	(0)
Educational level				
University degree	58.0	(115)	75.0	(64)
No university degree	42.0	(84)	25.0	(21)
Languages always/often used with child				
English	69.0	(137)	100.0	(85)
Bahasa Malaysia	42.0	(84)	0	(0)
Mandarin	19.0	(38)	0	(0)
Tamil	13.0	(27)	0	(0)
Other languages	11.0	(22) <sup>c</sup>	6.0	(5) <sup>d</sup>
Hours spent talking with child per day				
Less than one hour	3.0	(5)	0	(0)
1-2 hours	9.0	(18)	1.0	(1)
2-3 hours	17.0	(34)	5.0	(4)
3-4 hours	17.0	(34)	13.0	(11)
4-5 hours	15.0	(30)	17.5	(15)
5 hours or more	39.0	(78)	63.5	(54)

*Note.* \*some percentage rows do not add up to 100 as participants responded to all categories that were applicable to them. <sup>a</sup>This included mothers who are divorced (3), separated (1) and never married (1). <sup>b</sup>A description of each level of Occupation and the distribution of numbers across variables is listed in Appendix C. <sup>c</sup>For the Malaysian mothers, other languages used with the child included Cantonese (8), Hokkien (4), Iban (3), Japanese (1), Kelantan dialect (1), Sarawak Malay dialect (1), Perak dialect (1), Punjabi (1), Teo Chew (1) and Urdu (1). <sup>d</sup>For the New Zealand mothers, other languages used with the child included Dutch (2), Māori (2) and Korean (2).

## 1. Mothers' Age, Children's Age and Gender

The mothers who responded in the survey were between 21- and 48-years old. Most mothers in both groups were in their thirties. Malaysian mothers' age (mean = 34 years,  $SD = 4.46$ ) was comparable with New Zealand mothers (mean = 35 years,  $SD = 4.01$ ). There was no statistical significance,  $t(282) = -1.842$ ,  $p = 0.066$ . Mothers in the sample provided their children's age range prior to completing the survey. The children's age range in both the groups was comparable. Boys ( $N = 141$ ) and girls ( $N = 143$ ) were almost equally distributed in the total sample. The participants' child characteristics are displayed in Table 2.2

Table 2.2

*Demographic Data for Participants' Child Characteristics as a Percentage\* of the Group*

Variable	Malaysian mothers % (Total N)		New Zealand mothers % (Total N)	
Group N	(199)		(85)	
Age				
2-years old	30.0	(60)	38.0	(32)
3-years old	44.0	(88)	41.0	(35)
4-years old	26.0	(51)	21.0	(18)
Gender				
Male	48.0	(96)	53.0	(45)
Female	52.0	(103)	47.0	(40)
Languages always/often hears at home*				
English	74.9	(149)	100.0	(85)
Bahasa Malaysia	50.0	(99)	0	(0)
Mandarin	23.0	(46)	0	(0)
Tamil	15.0	(30)	0	(0)
Other languages	16.6	(33) <sup>a</sup>	7.0	(6) <sup>b</sup>
Person child spends most of his or her time with				
Immediate family <sup>c</sup>	31.2	(62)	87.1	(74)
Extended family <sup>d</sup>	20.6	(41)	0	(0)
Other <sup>e</sup>	48.2	(96)	12.9	(11)

*Note.* \*some percentage rows do not add up to 100 as participants responded to all categories that were applicable to them. <sup>a</sup>For the Malaysian mothers, other languages always/often heard by the child included Cantonese (16), Hokkien (7), Hakka (2), Teo Chew (1), Punjabi (1), Urdu (1), Iban (2), Sarawak Malay dialect (1), Kelantan dialect (1), Japanese (1). <sup>b</sup>For the New Zealand mothers, other languages always/often heard by the child included Dutch (4), Greek (1) and Korean (1). <sup>c</sup>This includes mother, father and other children. <sup>d</sup>This includes grandparents and cousins. <sup>e</sup>This includes babysitters, maid, teachers and carers.

## **2. Occupation**

Almost half (48%) of the New Zealand sample were full-time stay-at-home mothers. This is in comparison to 20.6% of Malaysian mothers who stayed at home, a difference that is statistically significant,  $\chi^2(1, N = 284) = 22.144, p < 0.001$ . Apart from the 4% ( $N=8$ ) of Malaysian mothers who did not state their occupation, all mothers in both groups held jobs that were between Level Four and Level Three of the International Standard Classification of Occupations (International Labour Office Geneva, 2012). A description of the mothers' and their respective spouse/partner's occupation as categorized into the four levels of the International Standard Classification of Occupations is attached in Appendix C. Two New Zealand mothers (2.4%) reported their husbands were stay-at-home fathers. There were no Malaysian stay-at-home fathers. More than half of the mothers within the Malaysian (56.4%) and New Zealand (57.7%) groups reported their husband held jobs that were categorized under Level Four, the occupation with the highest income capacity.

## **3. Maternal Education**

Although most of sampled population (63%) held a university degree (bachelor's degree or advanced degree), maternal education in both groups differed. More than three-quarters of New Zealand mothers (75%) held a university degree in comparison to 58% of Malaysian mothers. A quarter of New Zealand mothers (25%) held either secondary/high school qualification or a certificate/diploma compared to 42% of Malaysian mothers who held the same qualifications (no university degree). The group difference was statistically significant,  $\chi^2(1, N = 284) = 22.144, p < 0.001$ . Within the Malaysian sample, nearly two-thirds (74.4%) of Malaysian Chinese mothers held a university degree. This is in comparison to 47.4% of Malaysian Malay and 46.7% of Malaysian Indian mothers who held a university degree. The group difference was statistically significant,  $\chi^2(2, N = 199) = 14.445, p = 0.001$ .

#### 4. Languages

The Malaysian group when compared to the New Zealand group, presented with more diversity in language. The participants indicated that the total number of languages they spoke by identifying their native and non-native language or languages, and indicated if they considered these languages as their first, second, third or fourth language. Table 2.3 indicates the number of languages spoken by Malaysian and New Zealand mothers in the sample.

Table 2.3

*The Number and Percentage of Languages Spoken by Mothers*

	Malaysian mothers % (N)	New Zealand mothers % (N)
One language	4.0 (8)	74.1 (63)
Two languages	34.2 (68)	17.6 (15)
Three or more languages	61.8 (123)	8.2 (7)
Total	100.0 (199)	100.0 (85)

Overall, the number of languages spoken by Malaysian mothers was higher than New Zealand mothers, a difference that was statistically significant,  $\chi^2(2, N=284) = 159.972$ ,  $p < 0.001$ . The data show most Malaysian mothers in the sample were bilingual or multilingual speakers, while most New Zealand mothers were monolingual speakers. The survey data showed 20.1% ( $N = 40$ ) of Malaysian mothers indicated English as their native language. However, 35.1% ( $N = 71$ ) of Malaysian mothers considered English as their first language. Yet, 68.8% ( $N = 137$ ) of Malaysian mothers reported they frequently used English when communicating with their young child. In addition to English, mothers reported the frequent use of Bahasa Malaysia, Mandarin, Tamil and other languages when communicating with their young children. These languages mirrored the mothers' ethnic origins and cultural background, as illustrated in Table 2.4.



Table 2.4

*The Languages most Frequently used by Malaysian Mothers with their Children, as a Percentage\* and Number within their Ethnic Group.*

Malaysian Ethnic Origin	Languages 'almost always' and 'very often' used by mother when communicating with their young child									
	English		Bahasa Malaysia		Mandarin		Tamil		Other	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Malay (Total <i>N</i> = 76)	33	43	72	95	0	0	0	0	9 <sup>a</sup>	11.8
Chinese (Total <i>N</i> = 78)	64	82	6	7.7	38	48.7	0	0	11 <sup>b</sup>	14
Indian (Total <i>N</i> = 45)	40	89	6	13	0	0	27	60	2 <sup>c</sup>	4.4
TOTAL	137		84		38		27		22	

Note. \* rows do not add up to 100% as participants responded to all categories that were applicable.

<sup>a</sup>These other languages include Sarawak Malay dialect (1), Perak Malay dialect (1), Kelantan Malay dialect (1), Iban (2), Hokkien (1), Japanese (1) and Arabic (2). <sup>b</sup>These other languages include Cantonese (7), Hokkien (3), Teo Chew (1). <sup>c</sup>These other languages include Urdu (1) and Punjabi (1)

In contrast to Malaysian mothers, 97.6% (*N* = 83) of New Zealand mothers indicated English as their native language and 98.8% (*N* = 84) considered English as their first language. All New Zealand mothers reported frequent use of English when communicating with their children. In addition to above, respondents provided information on the total number of languages spoken by their young child, as illustrated in Table 2.5.

Table 2.5

*The Total Number of Languages Spoken by Target Child as a Percentage within the Cultural Group*

	Malaysian child	New Zealand child
	% ( <i>N</i> )	% ( <i>N</i> )
One language	5.5 (11)	83.5 (71)
Two languages	41.2 (82)	14.1 (12)
Three or more languages	53.3 (106)	2.4 (2)
Total	100.0 (199)	100.0 (85)

Overall, 94.5% of Malaysian mothers reported their young children age between 2-4 years spoke more than two languages. This is in contrast to 16.5% of New Zealand mothers who reported their young children spoke more than two languages, a difference that is statistically significant,  $\chi^2(2, N = 284) = 179.310, p < 0.001$ . The above data show that most of Malaysian mothers who responded in the survey had children who were bilingual or multilingual speakers. In contrast, most children of New Zealand were monolingual speakers. The survey data showed that 28.1% ( $N = 56$ ) of Malaysian mothers reported English as their young child's native language. However, 49.2% ( $N = 98$ ) of Malaysian mothers reported that they considered English as their child's first language; yet, 74.9% ( $N = 149$ ) of Malaysian mothers reported their child frequently heard English at home. In addition to English, mothers also reported that their young child frequently heard Bahasa Malaysia, Mandarin, Tamil and other languages at home. These languages mirrored the mother's ethnic origins and cultural background, as illustrated in Table 2.6.

Table 2.6

*The Languages most Frequently Heard by Malaysian Mothers' Target Child*

Malaysian Ethnic Origin	Languages Heard "Almost Always" and "Very Often" by Child at Home									
	English		Bahasa Malaysia		Mandarin		Tamil		Other	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Malay (Total $N = 76$ )	41	53.9	73	96	0	0	0	0	6 <sup>a</sup>	7.9
Chinese (Total $N = 78$ )	68	87.1	13	16.6	45	57.7	0	0	25 <sup>b</sup>	32
Indian (Total $N = 45$ )	40	88.8	13	28.8	1	2.2	30	66.6	2 <sup>c</sup>	4.4
TOTAL	149		99		46		30		33	

*Note.* \* percentage rows do not add up to 100 as participants responded to all categories that were applicable to them.

<sup>a</sup>These other languages include Sarawak Malay dialect (1), Kelantan Malay dialect (1), Iban (2), Hokkien (1) and Japanese (1). <sup>b</sup>These other languages include Cantonese (16), Hokkien (6), Hakka (2), Teo Chew (1). <sup>c</sup>These other languages include Urdu (1) and Punjabi (1)

In contrast to Malaysian mothers, 98.8% ( $N = 84$ ) of New Zealand mothers reported that English was their child's native language. All New Zealand mothers considered English as their child's first language. All New Zealand mothers reported their children always heard English at home. In addition to English, six New Zealand mothers reported their children frequently heard Dutch ( $N = 4$ ), Korean ( $N = 1$ ) and Greek ( $N = 1$ ) at home as well.

## **5. Hours spent talking with the child per day**

Overall, irrespective of language/languages used, Malaysian mothers reported spending less time per day talking with their children (mean = 4.51 hours) compared to New Zealand mothers (mean = 5.38 hours), a statistically significant difference,  $t(282) = -5.84, p < 0.001$ .

## **6. Family size**

Malaysian mothers reported a slightly larger nuclear family size (mean = 2.1 children) in comparison to New Zealand mothers (mean = 1.9 children), a difference that was not statistically significant,  $t(232) = -1.894, p = 0.059$ . In addition to living with their immediate family members, 41.2% of Malaysian mothers reported living with extended family members (that did not include a live-in-house helper). In contrast, only two New Zealand mothers (2.4%) reported living with extended family, a difference that was statistically significant,  $\chi^2(1, N = 284) = 21.868, p < 0.001$ . Within the Malaysian sample, 40% of Malaysian Indian, 25.6% of Malaysian Chinese and 18.4% of Malaysian Malay mothers reported living with extended family members (did not include live-in-house helper). The group difference was statistically significant,  $\chi^2(2, N = 199) = 6.834, p < 0.05$ . Slightly more than a quarter of Malaysian mothers (28.1%) reported their children spending most of their daytime with mothers. However, more than two thirds of New Zealand mothers (76.5%) reported their children spending most of his or her daytime with mothers. The overall difference was

statistically significant,  $\chi^2(6, N = 284) = 89.900, p < 0.001$ . The participants' family characteristics are displayed in Table 2.7.

Table 2.7

*Demographic Data for Participants' Family Characteristics as a Percentage\* of the Group*

Variable	Malaysian mothers		New Zealand mothers	
	%	(Total N)	%	(Total N)
Group N		(199)		(85)
Father's occupation				
Level Four	56.4	(112)	57.7	(49)
Level Three	18.6	(37)	24.7	(21)
Level Two	14.6	(29)	13.0	(11)
Level One	5.5	(11)	1.1	(1)
Stay-at-home father	0	(0)	2.4	(2)
Did not state	5.0	(10)	1.1	(1)
Number of children				
One	24.6	(49)	21.2	(18)
Two	50.0	(99)	64.7	(55)
Three	17.0	(34)	13.0	(11)
Four	6.0	(12)	1.1	(1)
Five	2.5	(5)	0	(0)
Live with extended family				
Yes	26.1	(52)	2.4	(2)
No	73.9	(147)	97.6	(83)
Who does the child spends most of his or her daytime with				
Mother	28.1	(56)	76.5	(65)
Father	28.1	(56)	4.7	(4)
My other children	0.5	(1)	2.4	(2)
Grandparents	19.1	(38)	0	(0)
Babysitters	16.6	(33)	1.2	(1)
Teachers	26.2	(53)	10.6	(9)
Other <sup>a</sup>	8.5	(17)	4.7	(4)

*Note.* \*some percentage rows do not add up to 100 as participants responded to all categories that was applicable to them. <sup>a</sup> includes other relatives, maids, carers, or a combination of all.

### 2.2.5 Procedure

Participants were sourced from local pre-schools, paediatricians' clinics, social, community, religious and parent organizations, blogs and related websites, and through the author's network of friends in Malaysia from February to April 2013, and in New Zealand

from February to April 2014. These organizations were contacted by telephone or email. Each received a cover letter (Appendix D), research leaflet (Appendix E) and information sheet (Appendix F) describing the intentions, expectations and, confidentiality aspects of the project. For some of these organizations, the researcher held a face-to-face meeting with the persons-in charge and made a verbal presentation to interested parties. The organizations that were keen to assist in the project were given the research leaflets. The person within these establishments distributed the leaflets to individuals who met the research criteria. The individuals who were interested in taking part in the study were asked to directly contact the author. Prospective participants were sent an information sheet about the project. This included details on research aims, participation, confidentiality, data storage and other related information. The eligible participants who agreed to take part in the study were asked to indicate their preferred language and method of receiving the questionnaire, that is, either an emailed web-page link or through the post.

A mixed-mode survey was used to minimize sampling bias and maximize the number and type of different respondents (Dillman, 2000). Poole and Loomis (2009) found that although the response rates between these two ways were not statistically different, there were major variations on scaled items. The authors explained that the differences in their study were attributed to the inconsistent manner in which the items on a 9-point scale were represented on the mail and internet survey. Although both survey modes were labelled with written descriptions at the end of each scale (one and nine only), only the mailed survey had additional numerical values. Whilst it is not the scope of this study to explore the advantages and disadvantages of using mixed mode survey, existing literature on the subject matter is acknowledged (Dillman, 2000; Check & Schutt, 2012). This study maintained consistency in the way demographic and scaled items were represented for both mailed and web surveys.

Participants who preferred to receive the web-page survey were sent an individual email with the Qualtrics link and a unique password. The respondents were required to click on the Qualtrics link or copy and paste the URL onto their browser. Once the webpage was accessed, respondents were prompted to enter their unique password to access and choose the language in which they would like to provide their answers on the questionnaire. Respondents had the flexibility to save their answers and return to the questionnaire at another time. The Qualtrics software automatically saved all responses and generated pre-programmed reminders and thank you letters. Paper questionnaires were sent out with return self-stamped envelopes. Participants were also given an option to drop off their sealed completed questionnaire at the office of the organization or school from which they had received the research leaflet. The author collected these sealed questionnaires. A thank you letter was sent to respondents who provided their postal address.

All participants were asked to complete their questionnaire in two weeks. Participants who did not complete the questionnaire within the given time were sent a weekly reminder letter for the next three weeks. Participants who had not responded to reminders after five weeks of initial contact were considered as non-respondents. All respondents who completed the questionnaire received a children's storybook in the post, with a letter inviting them to participate in Study 2. In addition, respondents who indicated an interest in participating in Study 2 were emailed an information sheet on the project.

In total, 406 interested participants in Malaysia and New Zealand received the questionnaire by either web survey link or post. However, 319 individuals completed the questionnaire (78.5%). A breakdown of participants' response preference to survey is presented in Table 2.8. The response rate for both web and mail surveys in both Malaysia and New Zealand was similar.

Table 2.8

*The Total Number of Participants who Received and Completed Survey and Response Rate*

Survey Mode	No of Participants				Total Received	Total Completed	Response Rate
	Malaysia		New Zealand				
	N Received Survey	N (%) Completed Survey	N Received Survey	N (%) Completed Survey			
Web survey	98	76 (77.5)	117	92 (78.6)	215	168	78.1%
Mail survey	189	150 (79.3)	2	1 (50)	191	151	79%
Total	287	226 (78.7)	119	93 (78.2)	406	319	78.5%

Of the total number of surveys received, 284 (89%) survey responses were analysed, 199 (70%) from Malaysian mothers and 85 (30%) from New Zealand mothers. The survey responses of 35 participants were excluded from analysis for the following reasons (a) ethnicity was not indicated or other ethnicities reported, (b) children were reported with suspected or confirmed speech-language and communication diagnosis or delay, (c) either English or BM was not spoken with children, (d) children's age did not meet research criteria, (e) father completed the questionnaire, and (f) questionnaire was partially completed. The majority of participants from Malaysia lived in Kuala Lumpur and the Selangor regions, whilst most of participants from New Zealand resided in Christchurch. The 199 mothers who resided in Malaysia reported their ethnicity as Malaysian Malay ( $N = 76$ ), Malaysian Chinese ( $N = 78$ ) and Malaysian Indian ( $N = 48$ ). All 85 mothers who resided in New Zealand identified themselves as New Zealand European or European.

## 2.3 INTER-RATER AGREEMENT

Given the respondents used either paper or electronic survey, all paper-based questionnaire responses were manually transferred into Qualtrics database to ensure consistency in storage and for subsequent data analysis. The author completed this task. However, in order to ensure the accuracy of and confidence in data entry, inter-rater agreement was calculated using percent agreement (Issel, 2009).

An individual who was born and educated in Malaysia, with language fluency and literacy in both English and Bahasa Malaysia was identified to complete the inter-rater agreement task. The rater was a Malaysian graduate who was in Christchurch on a work holiday program. Prior to starting the inter-rater agreement task, the rater was asked to sign a confidentiality agreement (Appendix G) to protect the personal information and responses of the participants in order to maintain data integrity. Following this, the rater read the *Training Manual for Questionnaire Data Entry*, an 8-page document prepared by the author (Appendix H). This document contained the procedures for entering each statement/question response from the paper questionnaire onto Qualtrics database. The rater underwent training and practice sessions with the author at the University of Canterbury's Child Language Centre prior to completing the task.

Sixteen (10%) paper-based survey responses were randomly selected for inter rater agreement. A total of 166 individual survey items were rated for agreement. A simple percent formula was used to calculate the number of agreements (Issel, 2009). The number and type of disagreement (between rater and author) were identified. In total 2656 survey items were coded on all 16 questionnaires (166 items per questionnaire), of which 2639 survey items achieved agreement between the rater and author. This resulted in 99.35% inter-rater agreement. Table 2.9 illustrates the inter-rater agreement results of the 16 survey responses using percent agreement.



Table 2.9

*Number and Percent of Correct Agreements for Inter-Rater Agreement*

<b>Participants</b>	<b>No of Correct Agreements</b>	<b>Percent</b>	<b>No of Errors</b>	<b>Comments</b>
S1001	164/166	98.7	2	CQ5 Language Order for BM NA vs. No code; CQ6 'Other' No code vs. NA
S1010	164/166	98.7	2	CQ19 Demographics; CQ24 Mum Language Order
S1020	165/166	99.4	1	CQ10 Mum Age
S1030	165/166	99.4	1	CQ1 Gender
S1040	164/166	98.7	2	CQ5 Language spoken & order
S1050	166/166	100	0	-
S1060	166/166	100	0	-
S1070	165/166	99.4	1	CQ25 Ethnicity not coded by S
S1080	165/166	99.4	1	CQ6 Tamil 'Very Often' vs. 'Almost Always'
S1090	165/166	99.4	1	CQ5 Language Order BM not coded.
S1100	163/166	98.2%	3	CQ23 Lang Knowledge: English 'Read' coded as 'Average' instead of 'NA' and English 'Writing' as 'Average' CQ27 'Other' coded correctly but did not add teach and fun with child as well.
S1110	166/166	100%	0	-
S1120	164/166	98.7%	2	CQ23 Language Knowledge - BM Understanding coded as 'Very Good' instead of 'Good' CQ23 Language Knowledge Tamil coded 'NA' instead of 'Very Good'
S1130	166/166	100%	0	-
S1140	165/166	99.4%	1	CQ25 'Unimportant' coded instead of 'Neither'
S1150	166/166	100%	0	-
<b>TOTAL</b>	<b>2639/2656</b>	<b>99.35%</b>	<b>17</b>	

Code: BM: Bahasa Malaysia

NA: Not Applicable

CQ: Section C, followed by Question Number

## 2.4 DATA ANALYSIS

The finalized survey responses ( $N = 284$ ) stored on Qualtrics database were exported into IBM SPSS Statistics Version 20 for analysis. Identifiable names and email addresses of each survey respondent were replaced with alphanumeric characters to preserve confidentiality. Subsequently, the response categories for 30 items on Section A were collapsed from five categories (Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree) to three categories, that is, *Agree*, *Disagree* and *Neutral*. The response categories for 30 items on Section B were collapsed from four categories (Hardly Ever, Sometimes, Very Often, Almost Always) to two categories: *Hardly Ever* and *Sometimes* and *Very Often* and *Almost Always*.

The Malaysian and New Zealand cultural group served as two levels of independent variable. In order to answer the second research question, that is. to examine ethnic differences in beliefs and practices across the Malaysia sample, the Malaysian Malay, Malaysian Chinese and Malaysian Indian groups served as three levels of independent variable. The dependent variables were the frequencies measured. For Section A of the questionnaire, three level of agreements was measured, that is, *Agree*, *Disagree* and *Neutral*. For Section B, the frequencies for *Hardly Ever* and *Sometimes* and *Very Often* and *Almost Always* were measured. All nominal response categories on the survey were assigned with individual numbers (known as *values*) on SPSS for quantitative analysis. However, these numerical values were not continuous (Field, 2009).

As the independent and dependent variables in the study were considered categorical, the data was statistically interpreted using Pearson Chi Square analysis on IBM SPSS Statistic Version 20. This study examined the relationship between two categorical variables by measuring frequencies for possible differences.

## 2.5 RESULTS

The purpose of this study was to examine the similarities and differences in the belief and practice patterns related to mother-child interactions among Malaysian and New Zealand mothers. In addition, differences and similarities in belief and practice patterns among the three Malaysian ethnic groups were examined. The results are organized in two sections (a) comparison between the New Zealand and Malaysian group and (b) comparison with the Malaysian subgroup.

### 2.5.1 Group Differences: Malaysian and New Zealand participants

The levels of agreement for the 30 ‘belief’ survey items, organized in the seven themes (i.e.; intentionality, value of talk, ways children learn, aspects emphasized in children, ways parents talk with children, status of interaction, and values concerning children and disabilities), were individually calculated using percentages. A non-parametric chi-square analysis was conducted to ascertain the distribution of responses for the two cultural groups. The alpha level was set at 0.001 to minimize Type 1 error. Given the use of a 2x3 contingency table (i.e., Asian/Western and Agree/Disagree/Neutral), Cramer’s  $V$  was utilized as a measure of strength between two variables as it is not influenced by sample size in instances where statistically significant chi-square values were due to large sample size (Cohen, 1988). According to Cohen’s (1988) guidelines (illustrated in Table 2.10), the interpretation of effect size for Cramer’s  $V$  is dependent on the  $df$  (degrees of freedom) used in the statistical calculations.

Table 2.10

*Effect sizes for Cramer’s  $V$  and Phi  $\phi$  values (Cohen 1988)*

$df$	Small effect	Medium effect	Large effect
= 1	0.10	0.30	> 0.50
=2	0.07	0.21	>0.35
=3	0.06	0.17	>0.29

Table 2.11

*Percentage of Malaysian and New Zealand Mothers Strongly Agreed or Agreed with the Belief Statements related to Mother-Child Interactions*

Theme	Truncated survey items	% Strongly agree or agree		Cramer's V effect size
		Malaysian	NZ	
<b>Intentionality</b>	A1 Intentionality begins before child talks	93.0	95.3	
	A2 Important to find out children's intentionality	93.5	89.4	
	A3 Important to teach as children too young to think on own	69.8	11.8***	.615
<b>Value of talk</b>	A4 Important for children to be talkative	55.8	24.7***	.292
	A6 Children ask too many questions	68.3	1.2***	.731
<b>Ways young children learn</b>	A7 Children learn best with instructions	54.3	11.8***	.418
	A8 Children learn important things while playing	95.0	100.0	
	A9 Children who observe quietly tend to be smart	46.7	16.5***	.289
<b>Important emphasis in young children</b>	A10 Family values	87.9	47.1***	.462
	A11 Play with parents	97.5	98.8	
	A12 Early academic achievement	42.7	9.4***	.391
	A13 Speech clarity than politeness	27.1	16.5*	.176
	A14 Teaching than having fun during play	52.8	1.2***	.637
	A15 Use of kinship/proper titles with all adults	83.9	16.5***	.693
<b>Ways parents talk with their children</b>	A5 Important for parents to be talkative	78.4	97.6***	.243
	A16 Unnecessary to talk during everyday routine activities	12.1	4.7**	.206
	A17 Important to use gestures/signs when talking	55.3	34.1**	.207
	A18 Important to ask children questions to test if they are learning	73.8	42.4***	.401
	A19 Parents should correct children's speech errors	91.0	49.4***	.471
<b>Status of interaction</b>	A20 Children speak to adults only when spoken to	10.1	1.2***	.259
	A21 Children talk better when parents control conversation	31.2	0.0***	.496
	A22 Important parents adjust talk to child's level	54.8	22.4***	.328
	A30 Parent and professional have equal expertise in children	29.1	2.4***	.354
<b>Values concerning children and views on disabilities</b>	A23 Individual independence/Autonomy in child	15.6	1.2***	.265
	A24 Children must be taught to depend on family	13.1	3.5***	.345
	A25 Children impolite if call adults by their first names	61.3	1.2***	.633
	A26 Boys and girls differ in communication needs	55.3	17.6***	.385
	A27 Important to accept grandparents'/elders' advice	36.2	2.4***	.426
	A28 Children with speech/language difficulties (SLD) an embarrassment	5.0	0.0**	.188
	A29 Use of traditional healing/medicine to cure SLD	4.5	2.4	

Note. \*p<.05; \*\*p<.01; \*\*\*p<.001

### **2.5.1.1 Survey responses: Beliefs related to mother-child interaction**

Statistically significant group difference ( $p < 0.001$ ) were observed for 21 of the 30 belief statements (A3, A4, A5, A6, A7, A9, A10, A12, A14, A15, A18, A19, A20, A21, A22, A23, A24, A25, A26, A27, A30). Table 2.11 displays the percentage of Malaysian and New Zealand mothers who strongly agreed or agreed with the thirty belief survey items. The statistical significance at three alpha levels and the corresponding effect sizes (Cramer's  $V$  Coefficient) are reported within the table.

In comparison to New Zealand mothers, Malaysian mothers demonstrated statistically significant agreement ( $p < 0.001$ ) and strong association (large effect size, Cramer's  $V > .35$ ) with the belief that:

- (i) children ask too many questions(A6) ( $\chi^2(2, N = 284) = 151.745$ , Cramer's  $V = .731$ )
- (ii) children need to learn to use kinship titles with all adults(A15) ( $\chi^2(2, N = 284) = 136.326$ , Cramer's  $V = .693$ )
- (iii) parents need to teach instead of having fun during playtime(A14) ( $\chi^2(2, N = 284) = 115.399$ , Cramer's  $V = .637$ )
- (iv) children are considered impolite if they call adults by their first names(A25) ( $\chi^2(2, N = 284) = 113.906$ , Cramer's  $V = .633$ )
- (v) parents need to teach young children what to say as they are too young to think on their own (A3) ( $\chi^2(2, N = 284) = 107.280$ , Cramer's  $V = .615$ ).
- (vi) children learn to talk better when parents take control of the conversation(A21) ( $\chi^2(2, N = 284) = 69.963$ , Cramer's  $V = .496$ )
- (vii) parents should correct children's speech errors(A19) ( $\chi^2(2, N = 284) = 62.955$ , Cramer's  $V = .471$ )
- (viii) it is most important for young children to learn family values(A10) ( $\chi^2(2, N = 284) = 60.625$ , Cramer's  $V = .462$ )

- (ix) it is important to accept grandparents or elders advice about raising young children(A27) ( $\chi^2(2, N = 284) = 51.423$ , Cramer's  $V = .426$ )
- (x) children learn best when they are given instructions(A7) ( $\chi^2(2, N = 284) = 49.579$ , Cramer's  $V = .418$ )
- (xi) it is important for parents to ask their children questions to test if they are learning(A18) ( $\chi^2(2, N = 284) = 45.576$ , Cramer's  $V = .401$ )
- (xii) it is important to emphasize early academic achievement in children(A12) ( $\chi^2(2, N = 284) = 43.528$ , Cramer's  $V = .391$ )
- (xiii) boys and girls have different needs for good communication skills(A26) ( $\chi^2(2, N = 284) = 42.104$ , Cramer's  $V = .385$ )

Although almost all NZ mothers viewed the importance of being talkative with their children, only 24.7% of NZ mothers agreed that it was important for children to be talkative. In contrast, 55.8% of Malaysian mothers were in agreement with the need for children to be talkative. The difference was statistically significant at  $\chi^2(2, N = 284) = 24.206$ ,  $p < 0.001$ , but the relationship between the belief and cultural group was moderate (Cramer's  $V = .292$ ).

### ***2.5.1.2 Survey responses: Practices related to mother-child interaction***

The self-reported frequencies of mothers' interaction practices were obtained from each of the 30 'practice' survey items. A chi-square analysis was conducted to compare the distribution of responses for the two cultural groups. The alpha level was set at 0.001 to minimize Type 1 error. Statistically significant group differences were observed in 18 of the 30 practice statements (B1, B2, B3, B4, B5, B6, B10, B11, B13, B14, B17, B18, B19, B20, B22, B24, B26, B27).

Table 2.12 displays the percentage of Malaysian and New Zealand mothers who reported the frequency of various interaction practices (in four themes), with statistical

significance at three alpha levels and the corresponding effect sizes. Given the use of a 2x2 contingency table (i.e., Asian/Western, and Hardly Ever & Sometimes/Very Often & Almost Always), Phi  $\phi$  coefficient was utilized as a measure of strength between two variables. The interpretation of effect size is dependent on the  $df$  (degrees of freedom) used in the chi square calculations, per Cohen's (1988) guidelines (listed in Table 2.10).

Although chi-square yielded statistically significant differences ( $p < 0.001$ ) in 18 of the 30 practice statements related to parent-child interactions, only two discourse practice generated strong associations with culture, that is, Phi  $> .50$  for  $df = 1$ . When compared to New Zealand mothers, Malaysian mothers showed statistically significant frequent practice in: (i) verbally reprimanding children's speech mistakes (B20) ( $\chi^2(1, N = 284) = 91.348, p < 0.001$ , Phi =  $-.567$ ), and (ii) direct correction) (B1) ( $\chi^2(1, N = 284) = 75.696, p < 0.001$ , Phi =  $-.516$ ).

The mothers' cultural group was statistically significant and moderately associated with the frequent discourse of seven practice statements. Malaysian mothers reported higher practice frequency in:

- (i) using educational DVDs or television/computer programs to teach children words (B11) ( $\chi^2(1, N = 284) = 43.878, p < 0.001$ , Phi =  $-.393$ )
- (ii) teaching during play (B17) ( $\chi^2(1, N = 284) = 33.662, p < 0.001$ , Phi =  $-.344$ )
- (iii) directly correcting child when some words are left out of a sentence (B3) ( $\chi^2(1, N = 284) = 33.433, p < 0.001$ , Phi =  $-.343$ )
- (iv) direct modelling (B27) (i.e., asking child to repeat words or sentence after mother) ( $\chi^2(1, N = 284) = 33.322, p < 0.001$ , Phi =  $-.343$ )
- (v) using flashcards to teach children words (B5) ( $\chi^2(1, N = 284) = 26.645, p < 0.001$ , Phi =  $.306$ ).

Table 2.12

*Percentage of Malaysian and New Zealand (NZ) Mothers Reported Almost Always or Very Often with the Practice Statements*

Theme	Truncated survey items	% Almost always/Very often		Phi $\phi$ Effect size
		Malaysian	NZ	
<b>Language-Modelling and Conversation-Eliciting Utterances</b>	B2 Follow child's lead in play	83.9	98.8***	.213
	B6 Expansion	67.8	90.6***	.239
	B9 Play with child	82.9	92.9*	.132
	B10 Talk about shared activities	66.3	95.3***	.306
	B12 Talk during everyday routine activities	87.9	98.8**	.176
	B13 Descriptive or Self talk	82.9	98.8***	.222
	B14 Turn taking	75.4	97.6***	.266
	B18 Follow child's lead in conversation	75.9	92.9***	.199
	B19 Talk about non shared events or activities	80.4	97.6***	.225
	B23 Use of gesture during talk	46.7	28.2**	-.172
	B28 Commenting or Parallel Talk	52.8	62.4	
	B29 Interpretation	55.3	72.9**	.166
	B30 Verbal praise or Acknowledgement	94.0	95.3	
<b>Behaviour- and Response- Control Utterances</b>	B1 Direct correction: wrong word use	80.9	27.1***	-.516
	B3 Direct correction: incomplete sentence	59.8	22.4***	-.343
	B7 Behaviour directives	63.3	51.8	
	B8 Attention directives	55.3	50.6	
	B16 Conversational control or Turn-taking control	19.6	8.2*	-.141
	B17 Teaching during play	67.8	30.6***	-.344
	B20 Verbal reprimand: mistakes in speech and word choices	65.3	3.5***	-.567
	B21 Test questions	83.9	72.9*	-.127
	B22 Response control or Commands	83.9	62.4***	-.236
	B24 Behaviour control	61.8	41.2***	-.190
	B26 Directive Yes or No Qs to elicit responses	71.4	48.2***	-.221
	B27 Direct modelling	57.3	20.0***	-.343
<b>Play with toys</b>	B15 Play in practical ways	65.8	51.8*	-.132
	B25 Play in various ways	52.8	43.5	
<b>Materials used to aid word learning</b>	B4 Books	59.3	97.6***	.386
	B5 Flashcards	33.7	4.7***	-.306
	B11 Educational DVDs, Television/Computer programs	49.7	8.2***	-.393

Note. \*p<.05; \*\*p<.01; \*\*\*p<.001



In contrast, New Zealand mothers reported higher frequency in: (i) reading books with child (B4) ( $\chi^2(1, N = 284) = 42.351, p < 0.001, \Phi = .386$ ), and (ii) encouraging children to talk to a family member about shared activities (B10) ( $\chi^2(1, N = 284) = 26.645, p < 0.001, \Phi = .306$ )

Nine discourse practice statements (B2, B6, B13, B14, B18, B19, B22, B24, and B26) yielded small associations ( $\Phi$  value between .10 and .29) with the cultural group. These were in relation to following the child's lead in play and conversations, expansion, descriptive/self-talk, turn taking, talking about non-shared events, use of response and behaviour control/commands, and directive yes or no questions to elicit responses.

### **2.5.2 Group Similarities: Malaysian and New Zealand participants**

In aspects related to beliefs in mother-child interactions, Malaysian and New Zealand mothers shared similar views that intentionality began before children talked (A1), it is important to find out what children were thinking (A2), children learnt important things while playing (A8), parents play with their children is important (A11), and using traditional healing/medicine would not cure speech-language difficulties (A29). Malaysian and New Zealand mothers in the sample indicated similar practices in using: (i) comments/parallel talk (B28), (ii) verbal praise/acknowledgment (B30), (iii) behaviour directives (e.g., “don’t”, “no” with child) (B7), (iv) attention directives (e.g., “look at me”, “look here” with child) (B8), and (v) encouraging children to play with objects in various ways (B25).

### **2.5.3 Subgroup Differences: Malaysian participants only**

The Malaysian subgroup participants consisted of Malaysian Malays (MM), Malaysian Chinese (MC) and Malaysian Indian (MI), hereafter referred to by acronyms. The three groups of mothers were more similar than different in their beliefs and practices related to mother-child interactions. However, some between-group differences were noted and the results for these are presented in Table 2.13 in the next section.

Table 2.13

*Percentage of Malaysian Mothers Strongly Agreed or Agreed with the Belief Statements related to Mother-Child Interactions*

Theme	Truncated survey items	% Strongly agree or agree			Effect size Cramer's V
		Malay <sup>a</sup>	Chinese <sup>b</sup>	Indian <sup>c</sup>	
<b>Intentionality</b>	A1 Intentionality begins before child talks	98.7	89.7	88.9	
	A2 Important to find out children's intentionality	96.1	93.6	88.9	
	A3 Important to teach as children too young to think on own	77.6 <sup>ab*</sup>	62.8 <sup>ab*</sup>	68.9	.220 <sup>ab</sup>
<b>Value of talk</b>	A4 Important for children to be talkative	65.8 <sup>ab**</sup>	46.2 <sup>ab**</sup>	55.6	.253 <sup>ab</sup>
	A6 Children ask too many questions	85.5 <sup>ab***</sup>	48.7 <sup>ab***,bc*</sup>	73.3 <sup>bc*</sup>	.391 <sup>ab</sup> ; .243 <sup>bc</sup>
<b>Ways young children learn</b>	A7 Children learn best with instructions	60.5	42.3 <sup>bc*</sup>	64.4 <sup>bc*</sup>	.226 <sup>bc</sup>
	A8 Children learn important things while playing	96.1	94.9	93.3	
	A9 Children who observe quietly tend to be smart	56.6 <sup>ab**;ac*</sup>	37.2 <sup>ab**</sup>	46.7 <sup>ac*</sup>	.288 <sup>ab</sup> ; .266 <sup>ac</sup>
<b>Important emphasis in young children</b>	A10 Family values	89.5	92.3	77.8	
	A11 Play with parents	96.1	98.7	97.8	
	A12 Early academic achievement	56.6 <sup>ab***</sup>	21.8 <sup>ab***,bc***</sup>	55.6 <sup>bc***</sup>	.367 <sup>ab</sup> ; .367 <sup>bc</sup>
	A13 Speech clarity than politeness	35.5 <sup>ab*</sup>	19.2 <sup>ab*</sup>	26.7	.239 <sup>ab</sup>
	A14 Teaching than having fun during play	75.0 <sup>ab***;ac*</sup>	32.1 <sup>ab***</sup>	51.1 <sup>ac*</sup>	.434 <sup>ab</sup> ; .255 <sup>ac</sup>
<b>Ways parents talk with their children</b>	A15 Use of kinship titles with all adults	90.8	78.2	82.2	
	A5 Important for parents to be talkative	92.2 <sup>ab**;ac**</sup>	70.5 <sup>ab**</sup>	68.9 <sup>ac**</sup>	.277 <sup>ab</sup> ; .302 <sup>ac</sup>
	A16 Unnecessary to talk during everyday routine activities	10.5	7.7 <sup>bc*</sup>	22.2 <sup>bc*</sup>	.229 <sup>bc</sup>
	A17 Important to use gestures/signs when talking	53.9	53.8	60.0	
	A18 Important to ask children questions to test if they are learning	80.3	64.1	80.0	
<b>Status of interaction</b>	A19 Parents should correct children's speech errors	96.1	85.9	91.1	
	A20 Children speak to adults only when spoken to	10.5 <sup>ab*</sup>	6.4 <sup>ab*</sup>	15.6	.201 <sup>ab</sup>
	A21 Children talk better when parents control conversation	42.1 <sup>ab***</sup>	15.4 <sup>ab***,bc**</sup>	40.0 <sup>bc**</sup>	.339 <sup>ab</sup> ; .296 <sup>bc</sup>
	A22 Important parents adjust talk to child's level	56.6	50.0	60.0	
<b>Values concerning children and views on disabilities</b>	A30 Parent and professional have equal expertise in children	26.3	32.1	28.9	
	A23 Individual independence/Autonomy in child	9.2 <sup>ab*;ac**</sup>	11.5 <sup>ab*;bc***</sup>	33.3 <sup>bc***;ac**</sup>	.214 <sup>ab</sup> ; .328 <sup>bc</sup> ; .302 <sup>ac</sup>
	A24 Child must be taught to depend on family	11.8 <sup>ab*;ac**</sup>	7.7 <sup>ab*;bc*</sup>	24.4 <sup>bc*;ac**</sup>	.234 <sup>ab</sup> ; .237 <sup>bc</sup> ; .284 <sup>ac</sup>
	A25 Children impolite if call adults by their first names	64.5	59.0	60.0	
	A26 Boys and girls differ in communication needs	52.6	57.7	55.6	
	A27 Important to accept grandparents'/elders' advice	59.2 <sup>ab***</sup>	5.1 <sup>ab***,bc***</sup>	51.1 <sup>bc***</sup>	.602 <sup>ab</sup> ; .561 <sup>bc</sup>
	A28 Children with speech/language difficulties an embarrassment	5.3	1.3 <sup>bc*</sup>	11.1 <sup>bc*</sup>	.226 <sup>bc</sup>
	A29 Use of traditional healing/medicine to cure SLD <sup>d</sup>	2.6	3.8	8.9	

Note. \*p<.05; \*\*p<.01; \*\*\*p<.001; <sup>d</sup>SLD= speech/language difficulties. Cohen's (1988) guidelines for Cramer's V effect size: small (.07), medium (.21) and large (>.35)

### ***2.5.3.1 Survey responses: Beliefs related to mother-child interactions***

The results for group differences in beliefs are presented in three sections: (1) Malaysian Malay (MM) and Malaysian Chinese (MC) group, (2) Malaysian Chinese and Malaysian Indian (MI) group, and (3) Malaysian Indian and Malaysian Malay group.

#### **1. Malaysian Malay and Malaysian Chinese group**

**Differences in reported beliefs.** MM and MC mothers displayed statistically different beliefs that were significant at  $p < .001$  for five statements related to parent-child interactions. More MM than MC mothers indicated a higher level of agreement with belief items related to: (i) accepting grandparents' or elders' advice in raising young children (A27) ( $\chi^2(2, N = 154) = 55.796$ , Cramer's  $V = .602$ ); (ii) teaching instead of having fun during play (A14) ( $\chi^2(2, N = 154) = 29.022$ , Cramer's  $V = .434$ ); (iii) children asking too many questions (A6) ( $\chi^2(2, N = 154) = 23.594$ , Cramer's  $V = .391$ ); (iv) the emphasis of early academic achievement in the young child (A12) ( $\chi^2(2, N = 154) = 20.760$ , Cramer's  $V = .367$ ); and, (v) parents taking control of conversation to enable the child to learn to talk better ( $\chi^2(2, N = 154) = 17.658$ , Cramer's  $V = .339$ ).

**Similarities in reported beliefs.** MM and MC mothers showed similar levels of agreement in seventeen belief statements related to: intentionality (A1, A2); ways children learn (A7, A8); important aspects emphasized in young children (A10, A11, A15); ways parents talk with their children (A16, A17, A18, A19); status of interaction (A22, A30); and values concerning children and views on disabilities (A25, A26, A28, A29).

#### **2. Malaysian Chinese and Malaysian Indian group**

**Differences in reported beliefs.** MC and MI mothers displayed statistically different beliefs in three statements related to parent-child interaction. More MI than MC mothers

indicated agreement in: (i) accepting grandparents' or elders' advice in raising young children (A27) ( $\chi^2(2, N = 123) = 38.764, p < .001$ , Cramer's  $V = .561$ ); (ii) emphasizing early academic achievement in young children (A12) ( $\chi^2(2, N = 123) = 16.550, p < .001$ , Cramer's  $V = .367$ ); and, (iii) inhibiting individual independence in the child (A23) ( $\chi^2(2, N = 123) = 13.256, p < .001$ , Cramer's  $V = .328$ ).

**Similarities in reported beliefs.** MC and MI mothers showed similar levels of agreement in twenty-one belief items related to: intentionality (A1, A2, A3); value of talk (A4); ways children learn (A7, A8, A9); important aspects emphasized in young children (A10, A11, A13, A14, A15); ways parents talk with children (A5, A17, A18, A19); status of interaction (A22, A30); and values concerning children, and views on disabilities (A25, A26, A30).

### 3. Malaysian Indian and Malaysian Malay group

MI and MM mothers were largely similar in their beliefs related to mother-child interactions. No statistically significant difference was noted at  $p < .001$ .

#### 2.5.3.2 Survey responses: Practices related to parent-child interaction

The percentage of MM, MC and MI mothers who reported almost always or very often for each of the 30 practice statements are presented in Table 2.14. The statistical significance and the corresponding effect sizes computed from 2x2 (ethnic groups x survey response (almost always/very often, and sometimes/hardly ever) contingency chi-square table for the group are reported. Statistical significance level was set at  $p < 0.001$ . Phi for effect size was used to measure the degree of association, displayed in Table 2.15. Given that  $df = 1$ , Cohen's (1988) guidelines, that is, small effect (.010), medium effect (.30) and large effect >.50) were used to describe the strength of association between ethnic groups and survey items.

### **1. Malaysian Malay (MM) and Malaysian Chinese (MC) groups**

MM and MC mothers displayed statistically different practice in frequency of taking turns with their children during interactions ( $\chi^2(1, N = 154) = 11.717, p = 0.001, \Phi = .276$ ). Nearly 90% of MC mothers, when compared to 67% of MM mothers reported taking turns with their children. MM and MC mothers shared similar interaction practices on all other practice items as no other statistically significant different practices were detected.

### **2. Malaysian Chinese (MC) and Malaysian Indian (MI) groups**

Parallel to the previous group, the results show MC and MI mothers displayed statistically different practice in frequency of taking turns with their children during interactions ( $\chi^2(1, N = 123) = 11.630, p = 0.001, \Phi = -.307$ ). Nearly 90% of MC mothers, when compared to 64% of MI mothers, reported taking turns with their children. MC and MI mothers reported similar interaction practices on all other practice items.

### **3. Malaysian Indian (MI) and Malaysian Malay (MM) groups**

The MI and MM mothers reported very similar discourse practice related to parent-child interactions. None of the practice statements yielded statistically significant difference at  $p < 0.001$ .

#### ***2.5.3.3. Key findings for beliefs and practices in Malaysian group***

**Beliefs.** The results reveal Malaysian mothers in the sample shared similar beliefs for 14 survey items. These were regarding intentionality; finding out what children were thinking; learning important things while playing; emphasis on learning family values and using kinship titles with all adults; importance of parents playing with their children, using gestures/signs when talking, asking questions to test children's knowledge, correcting their

speech errors and adjusting parental talk to children's level. In addition, Malaysian mothers were of similar opinion that parents and professionals who work with children have equal expertise, it was impolite to call adults by their first names, boys and girls have different communication needs, and it was not important to use traditional healing/medicine to cure speech-language difficulties. Ethnicity had the largest effect on chance of agreement in accepting grandparents' or elders' advice in raising young children for Malaysian mothers. More than half of Malaysian Malay mothers (59.2%) ( $\chi^2(2, N = 154) = 55.796, p < .001$ , Cramer's  $V = .602$ ), and slightly over half of Malaysian Indian mothers (51.1%) ( $\chi^2(2, N = 123) = 38.764, p < .001$ , Cramer's  $V = .561$ ) mothers indicated agreement in accepting grandparents' or elders' advice, when compared to less than 5% of Malaysian Chinese mothers.

**Practices.** Overall, Malaysian mothers of Malay, Chinese and Indian ethnicities reported very similar practice related to parent child interactions. The frequent use of turn taking was the only survey item that generated a significance difference at  $p = .001$  for two groups of Malaysian mothers, yielding a moderate relationship between ethnicity and practice statement. Nearly 90% of Malaysian Chinese mothers reported frequent practice of turn taking when compared to 64.4% Malaysian Indian mothers ( $\chi^2(1, N = 123) = 11.630, p = 0.001, \text{Phi} = -.307$ ), and Malaysian Malay mothers ( $\chi^2(1, N = 154) = 11.717, p = 0.001, \text{Phi} = .276$ ).

Table 2.14

*Percentage of Malaysian Mothers Reported Almost Always or Very Often with the Practice Statements*

Theme	Truncated survey items	% Almost always/Very often			Effect size Phi
		Malay <sup>a</sup>	Chinese <sup>b</sup>	Indian <sup>c</sup>	
<b>Language-Modelling and Conversation-Eliciting Utterances</b>	B2 Follow child's lead in play	82.9	88.5	77.8	
	B6 Expansion	65.8	66.7	73.3	
	B9 Play with child	84.2	79.5	86.7	
	B10 Talk about shared activities	76.3 <sup>ab*</sup> ; <sup>ac*</sup>	61.5 <sup>ab*</sup>	57.8 <sup>ac*</sup>	-.160 <sup>ab</sup> ; -.194 <sup>ac</sup>
	B12 Talk during everyday routine activities	88.2	85.9	91.1	
	B13 Descriptive or Self talk	82.9	82.1	84.4	
	B14 Turn taking	67.1 <sup>ab***</sup>	89.7 <sup>ab***</sup> ; <sup>bc***</sup>	64.4 <sup>bc***</sup>	.276 <sup>ab</sup> ; -.307 <sup>bc</sup>
	B18 Follow child's lead in conversation	72.4 <sup>ac*</sup>	71.8 <sup>bc*</sup>	88.9 <sup>bc*</sup> ; <sup>ac*</sup>	.199 <sup>bc</sup> ; .194 <sup>ac</sup>
	B19 Talk about non shared events or activities	84.2	78.2	77.8	.
	B23 Use of gesture during talk	52.6	39.7	48.9	
	B28 Commenting or Parallel Talk	48.7	51.3	62.2	
	B29 Interpretation	60.5	55.1	46.7	
	B30 Verbal praise or Acknowledgement	96.1	93.6	91.1	
<b>Behaviour- and Response-Control Utterances</b>	B1 Direct correction: wrong word use	86.8	74.4	82.2	
	B3 Direct correction: incomplete sentence	60.5	52.6 <sup>bc*</sup>	71.1 <sup>bc*</sup>	.182 <sup>bc</sup>
	B7 Behaviour directives	61.8	57.7 <sup>bc*</sup>	75.6 <sup>bc*</sup>	.180 <sup>bc</sup>
	B8 Attention directives	59.2	43.7 <sup>bc**</sup>	68.9 <sup>bc**</sup>	.244 <sup>bc</sup>
	B16 Conversational control/Turn taking control	22.4	14.1	24.4	
	B17 Teaching during play	69.7	59.0 <sup>bc*</sup>	80.0 <sup>bc*</sup>	.215 <sup>bc</sup>
	B20 Verbal reprimand: mistakes in speech and word choices	71.1	57.7	68.9	
	B21 Test questions	82.9	83.3	86.7	
	B22 Response Control or Commands	86.8	78.2	88.9	
	B24 Behaviour control	68.4 <sup>ab*</sup>	50.0 <sup>ab*</sup> ; <sup>bc*</sup>	71.1 <sup>bc*</sup>	-.187 <sup>ab</sup> ; .206 <sup>bc</sup>
	B26 Directive Yes or No Qs: to elicit responses	75.0	69.2	68.9	
	B27 Direct modelling	63.2 <sup>ab*</sup>	47.4 <sup>ab*</sup>	64.4	-.158 <sup>ab</sup>
<b>Play with toys</b>	B15 Play in practical ways	68.4	60.3	71.1	
	B25 Play in various ways	53.9	50.0	55.6	
<b>Materials used to aid word learning</b>	B4 Books	52.6	66.7	57.8	
	B5 Flashcards	30.3; <sup>ac*</sup>	26.9 <sup>bc**</sup>	51.1 <sup>bc**</sup> ; <sup>ac*</sup>	.243 <sup>bc</sup> ; .208 <sup>ac</sup>
	B11 Educational DVDs, Television or Computer programs	57.9 <sup>ab**</sup>	35.9 <sup>ab**</sup> ; <sup>bc**</sup>	60.0 <sup>bc**</sup>	-.220 <sup>ab</sup> ; .233 <sup>bc</sup>

Note. \*p&lt;.05; \*\*p&lt;.01; \*\*\*p&lt;.001

## 2.6 DISCUSSION

Research has shown cultural differences in beliefs and practices around engaging young children in various cultures living across countries and within countries. For example, Cheah and Rubin (2003) surveyed interaction beliefs of European-American mothers living in Washington, and Chinese mothers living in Beijing, whereas Simmons and Johnston (2007) examined mothers of Euro-Canadian and Indian origin living in Canada. Given that there has been no similar study in New Zealand or Malaysia and within a multicultural population living in Asia, the aim of this study was two-fold. First, the study examined the reported beliefs and practices concerning mother-child interactions among mothers living in Malaysia and New Zealand (of European descent). Secondly, the study compared these perceptions within the Malaysian cultural subgroups in order to detect differences in beliefs and practices between Malaysian Malay, Malaysian Chinese and Malaysian Indian mothers.

Surveys were administered to all participants and they were asked to rate their beliefs on a five-point Likert scale and indicate frequency of their interaction behaviours on a four-point frequency scale. The results revealed mothers in Malaysia and New Zealand (sampled group) differed significantly ( $p < 0.001$ ) in their:

1. level of agreement in twenty-one (of thirty) belief statements related to talkativeness, children asking questions, conversation control, kinship terms and politeness, advice of grandparents/elders, communications needs for boys and girls, intentionality, teaching and academic achievement, ways children learn, use of verbal reprimands and direct corrections by parents, and materials used to aid word learning (see Table 2.15), and
2. frequency of practice in eighteen (of thirty) practice statements concerning use of conversation-eliciting and language-modelling utterances, behaviour- and response-control utterances, play with toys, and materials to aid word learning (see Table 2.16).



Table 2.15

*Summary of belief items that yielded large significant differences between Malaysian and New Zealand group*

Truncated survey belief items	% Agreement <sup>a</sup>		Effect Size
	MY <sup>b</sup>	NZ <sup>c</sup>	
A3 Important to teach as children too young to think on own	69.8	11.8*** <sup>d</sup>	.615
A6 Children ask too many questions	68.3	1.2***	.731
A7 Children learn best with instructions	54.3	11.8***	.418
A10 Family values	87.9	47.1***	.462
A12 Early academic achievement	42.7	9.4***	.391
A14 Teaching than having fun during play	52.8	1.2***	.637
A15 Use of kinship/proper titles with all adults	83.9	16.5***	.693
A18 Important to ask children questions to test learning	73.8	42.4***	.401
A19 Parents should correct children's speech errors	91.0	49.4***	.471
A21 Children talk better when parents control conversation	31.2	0.0***	.496
A25 Children impolite if call adults by their first names	61.3	1.2***	.633
A26 Boys and girls differ in communication needs	55.3	17.6***	.385
A27 Important to accept grandparents'/elders' advice	36.2	2.4***	.426

Note: Only items that yielded large effect size (Cramer  $V > 0.35$ ) are listed above.

<sup>a</sup>Includes strongly agree and agree responses; <sup>b</sup>Malaysian; <sup>c</sup>New Zealand; <sup>d</sup> $p < 0.001$

Table 2.16

*Summary of practice items that yielded small, moderate and large significant differences between Malaysian and New Zealand group*

Truncated survey practice items	% Frequency <sup>a</sup>		Effect size
	MY <sup>b</sup>	NZ <sup>c</sup>	
B2 Follow child's lead in play	83.9	98.8*** <sup>d</sup>	.213
B6 Expansion	67.8	90.6***	.239
B10 Talk about shared activities	66.3	95.3***	.306
B13 Descriptive or Self talk	82.9	98.8***	.176
B14 Turn taking	75.4	97.6***	.222
B18 Follow child's lead in conversation	75.9	92.9***	.266
B19 Talk about non shared events or activities	80.4	97.6***	.199
B1 Direct correction: wrong word use	80.9	27.1***	-.516
B3 Direct correction: incomplete sentence	59.8	22.4***	-.343
B17 Teaching during play	67.8	30.6***	-.344
B20 Verbal reprimand: mistakes in speech/word choice	65.3	3.5***	-.567
B22 Response control or Commands	83.9	62.4***	-.236
B24 Behaviour control	61.8	41.2***	-.190
B26 Directive Yes or No Qs to elicit responses	71.4	48.2***	-.221
B27 Direct modelling	57.3	20.0***	-.343
B4 Books	59.3	97.6***	.386
B5 Flashcards	33.7	4.7***	-.306
B11 Educational DVDs or Television or Computer programs	49.7	8.2***	-.393

Note: All items that yielded small, moderate and large effect size (Phi  $\phi$ : 0.10 to  $>0.50$ ) are listed above.

<sup>a</sup>Includes almost always/very often responses; <sup>b</sup>Malaysian; <sup>c</sup>New Zealand; <sup>d</sup> $p < 0.001$

While the findings support existing evidence that Western Caucasian and Asian mothers have distinct belief and interaction patterns (e.g., Johnston & Wong, 2002; Jose et al., 2000), it was less clear whether subgroups within a specific Asian culture would differ. In the second part of the study, the results showed Malaysian mothers across cultural groups were more similar than different in their beliefs and practices related to verbal and interaction. In particular, Malaysian Malay and Malaysian Indian mothers were more alike in their beliefs and practices when compared to the other two groups. Overall mothers in the Malaysian Chinese and Malaysian Malay exhibited more statistically significant different belief and interaction practices than mothers in the Malaysian Chinese and Malaysian Indian groups.

The discussion will focus on results that generated significant differences that yielded large effect sizes for belief and practice survey items. As a caveat, references made to New Zealand and Malaysian mothers are made within the context of the sampling frame, so caution is needed in generalizing to the broader population. In addition, the term Western Caucasian used in the study specifically refers to Caucasian mothers of American or European descent living specifically in the United States, Canada and Great Britain, as research shows Caucasian European mothers living in other countries, for example, Estonia have different cultural values (Tulviste, 2014). The discussion in Section 2.6.1 will centre on the first aim and in Section 2.6.2, the second aim.

### **2.6.1 Malaysian and New Zealand mothers' reported interaction patterns**

Thirteen large-effect and eight moderate-effect sized differences were identified for belief items. In addition, Malaysian and New Zealand mothers significantly differed on eighteen practice items, of which two, seven and nine practice items generated large, moderate and small effect sizes respectively. The findings will be discussed within three

themes related to value of talk, family and child-rearing values, and teaching and learning in young children. Possible interpretations for these differences will be considered. In addition, similarities will be highlighted.

### ***2.6.1.1 Differences in beliefs and practices***

#### **1. Value of talk**

**Talkativeness.** Verbosity or verbal competence in children was reported to be highly valued and encouraged by Western Caucasian mothers (Hart, 2004; Hart & Risley, 1992). Surprisingly, the results show that only a quarter of New Zealand mothers (in comparison to more than half of Malaysian mothers) believed it was important for children to be talkative. This finding does not necessarily indicate New Zealand mothers do not value talkativeness. Instead, it may be that differences in research methodologies contributed to the surprising finding. In Hart and Risley's study, mothers were observed interacting with children in their naturalistic environment for one hour every month over 27 months. At the start of the observation, the youngest was 9 months old and the oldest child at the end of the observation was 36 months. In addition, the mothers were given a description of the study goal, which was 'to investigate how children learn to talk through casual social interactions at home' (p.1097). Given the children were younger (some of whom might not have started talking in word combinations), and mothers' knowledge that the goal of the study focused on talking, mothers could have emphasized on verbosity or verbal competence in children. In contrast, the children of New Zealand mothers in the sample were between 24 and 59 months, and mothers were informed that the study, conducted via a survey, concerned beliefs and practices related to mother-child interactions. These factors might not have highlighted the need for children to be talkative whilst the mothers were completing the survey. In addition, given that most of the Malaysian mothers in the sample reported that they and their children

spoke more than one language at home, they could have emphasized on children being talkative as a means to be competent in language, suggesting the close link between languages and culture (Baker, 2011).

Although New Zealand mothers, on the average, did not value talkativeness in their children as much as Malaysian mothers in the sample, almost all New Zealand mothers agreed it was important for parents to be talkative with their children. The later finding confirms the Western view that it is advantageous for parents to be talkative to their children in order to aid language development (Bornstein et al., 1990; Jose et al., 2000; Harwood et al., 1999; McCollum et al., 2000). The current finding indicates New Zealand mothers placed more emphasis on parents being talkative with their children, than children being talkative. In contrast to New Zealand mothers, Malaysian mothers were less likely to agree that it was important for parents to be talkative with their children. This could be somewhat related to the way families are organized in Western and Asian cultures. Malaysian families are primarily hierarchical and patriarchal structure in nature (Gomez & Suhaimi, 2014; Hossain, 2014; Lian & Abdullah, 2001). Western families do not seem to follow these patterns as children are viewed as equal partners in relationships/interactions and are not subjected to hierarchical structures within the family (Hanson, 2011; Tamis-LeMonda & McFadden, 2010). Thus, it was not surprising that in terms of practice related to talk, most New Zealand mothers when compared to Malaysian mothers reported they frequently talked to their children about what was going around them and encouraged their children to talk to a family member about their shared activities. The findings suggest mothers' talk, interaction and conversation patterns with their children could be influenced by family structures, and in the way relationships/interactions are organized in various cultures.

**Children ask too many questions.** Although fewer New Zealand mothers valued talkativeness in children as compared to Malaysian mothers, the former group did not think

children asked too many questions. In comparison to 68% of Malaysian mothers, only 1% of New Zealand mothers agreed children asked too many questions. This finding is parallel to Simmons and Johnston's (2007) study, where fewer European Canadian mothers, when compared to Indian mothers, agreed children asked too many questions. The large effect size (Cramer's  $V = .73$ ) identified between Malaysian and New Zealand mothers suggests that differences could be attributed to distinct cultural philosophy. Socrates (469-399 B.C.E.), a legendary Western philosopher, was of the opinion that questioning others and self was necessary to generate knowledge and learning (Tweed & Lehman, 2002). New Zealand mothers, similar to Western Caucasian mothers in other regions, seem to value questioning as a form of individual expression to gather and appraise knowledge. In contrast, Confucius (551-479 B.C.E), an Eastern philosopher, was of the opinion that learning was not acquired by questioning alone, but through hard work and by respecting and obeying authority figures. As such, it may be possible that more than the two-thirds of Malaysian mothers who agreed children asked too many questions could have viewed questioning as an act of challenging parental knowledge and authority, instead as a means to acquire knowledge.

Given that most Asian cultures viewed parents as of higher status and having greater knowledge than children, Chan and Chen (2011) posited that children who were talkative and asked too many questions were viewed as disobedient and disrespectful. As such, it was not surprising that more than two-thirds of Malaysian mothers strongly believed it was important for parents to ask children questions to test their knowledge when compared to less than half of New Zealand mothers who indicated the same. This finding suggests that Malaysian mothers valued parents asking children questions in order to test their knowledge/learning. However, New Zealand mothers valued children asking questions, which could be as a means to help children gather their own knowledge. However, in terms of interaction practice, more

Malaysian than New Zealand mothers reported using test questions with their children, although the difference was not statistically significant.

**Conversation control.** Conversational control refers to parents' dominating their talk time with children for various reasons. In some cultures, parents have been reported to talk with their children primarily to issue commands to execute a certain task or bring a change in their behaviour (Chan & Chen, 2011). In this study, more Malaysian than New Zealand mothers believed "young children would learn to talk better when parents took control of the conversations". A possible explanation could be in the way families view children as interaction partners. Within structured family strata, as with Malaysian families, children are viewed as individuals with lesser experience and knowledge, and thus require an adult with greater experience and knowledge to teach children (Gomez & Suhaimi, 2014, Hossain, 2014). As a result, Malaysian mothers might have adopted the belief that by controlling children's conversations, children can learn to talk better. In contrast, none of the New Zealand mothers believed that parental control of conversation would enable children to talk better, thus suggesting New Zealand mothers value children as equal/joint partners in conversations. Mothers' view of their conversational role with their children, specifically, to control or to partner conversations, will influence turn-taking in interactions. Almost all New Zealand mothers in the sample, compared to three quarter of Malaysian mothers, indicated frequent turn-taking practice with their children in conversations and reported frequently following their children's lead (in choosing their own items) during playtime. Turn-taking and following children's lead are one of the interaction behaviours emphasized in parent-based language intervention programs (Pepper & Weitzman, 2004), and the results show more New Zealand than Malaysian mothers reported frequent practice of these interaction behaviours.

## 2. Family and child-rearing values

Beliefs concerning use of kinship terms as a polite behaviour, respect towards grandparents and elders, and communication needs for boys and girls are discussed in the following sections.

**Kinship terms and politeness.** Nearly 90% of Malaysian mothers, in comparison to less than half of New Zealand mothers, believed that the most important thing for young children to learn was family values. Family values may include (but not limited) to etiquette and polite behaviours (e.g., use of kinship terms/honour titles when greeting one another), and customs associated with culture, tradition, and religious faith or rituals. Malaysian mothers may have emphasized children learning family values in order to foster behaviours that conform to cultural beliefs, respect and obedience towards parents and elders, and promote family harmony.

More than three quarters of Malaysian mothers (in comparison to less than a quarter of New Zealand mothers) believed it was important for children to learn to use kinship/proper titles (e.g., Aunt and Uncle or Mr, Mrs, and Ms) when speaking with non-family adult members or strangers. These findings suggest that Malaysian mothers, along with other Asian families living elsewhere (Chan & Chen, 2011; Issac et al., 2014; Jacob, 2011; Simmons & Johnston, 2007), value the use of kinship titles as a means of showing respect, warmth and politeness to non-family adults in the community. Quite to the contrary, Chinese mothers in Canada valued children learning object names, more so than proper titles. Although it was not a statistically significant finding, just over half of Chinese mothers, in comparison to most of European Canadian mothers indicated agreement with the belief that “proper titles for people (e.g., ‘Aunt Sally’) are more important to learn than objects” (Johnston & Wong, 2002).

It might be worthwhile to note that the percentage of European mothers who indicated agreement in the importance of children using kinship/proper titles in the Canadian studies in

year 2002 (90%) and year 2007 (33%), and in New Zealand (17%) was remarkably less over time. This suggests that the influences of the chronosystem (changes over a time period within an environment) in the Ecological Model (Bronfenbrenner, 1986) may need to be considered in order to understand changes in values and behaviour patterns. The increasing emphasis in equality in public legislations and in particular equal partnerships in interactions among Western cultures could have accounted for the gradual decline in using proper titles. Ahtzener, (2011), and Shupe and Shupe (2012) pointed out that parents (with reference to parents in the United States) who raised their children in the 1980s and in the earlier years and decades valued the use of proper titles, but its value has been less emphasized in recent years. However, the authors remarked that some Western families in the southern United States still preferred to be addressed by proper titles and believed that it is an expression of politeness and that it should be maintained. Hanson (2011) remarked that Western communities preferred the use of first names in interactions, whilst acknowledging that the use of informal greetings may be construed as impolite and “uncultured” by others. Hanson’s comments are affirmed in the present study as nearly two-thirds of Malaysian mothers (in comparison to just one New Zealand mother) were of the opinion that it was impolite for young children to call adults who are non-family members or strangers by their first names. The findings of this study and related literature indicate that cultural values evolve over time. In addition, the generalization of a particular behaviour with all members of same culture (even if they lived in the same country) may not be appropriate.

**Advice of grandparents/elders.** Respect for parents, grandparents and elders in the family are considered a virtue in Asian and Malaysian communities as explained by Chan and Chen (2011) and Hossain (2014). More Malaysian mothers than New Zealand mothers indicated agreement that it was important for parents to accept elders’ or grandparents’ advice in raising young children. This finding indicates the influential role of elders and



grandparents in young families within the Malaysian sample. In addition, the finding adds to the literature of the number of cultural groups who value involvement of elders/grandparents in raising their young children, as evident in Indian, Dene, Mexican-American, Hispanic and Latino families (Jonk & Enns, 2009; Harwood et al., 1999; Kakar & Kakar, 2007; Matos et al, 2006; Simmons & Johnston, 2007). In contrast, these data suggest that New Zealand mothers may not value elders' or grandparents' advice as they, similar to other Western Caucasian families (Hanson, 2011) believe that parenting responsibilities rests solely on the parents themselves. The findings imply that the maxims, "It takes a village to raise children (an African proverb) and "It just takes the parents to raise their children" (C. Brantley, personal communication, 24 November, 2014) may be justifiably endorsed and fervently practiced in various cultures. Information on the specific roles grandparents or extended family members adopt in a given family may offer insight on how families raise their children and make decisions concerning their children, especially for those who require intervention.

**Communications needs of boys and girls.** More Malaysian than New Zealand mothers indicated agreement that boys and girls have different needs for good communication skills. The difference can be explained in terms of how boys and girls are distinctly treated across some cultures. New Zealand mothers, similar to other Western Caucasian mothers, appear to emphasize equality between sexes (Tamis-LeMonda & McFadden, 2010). As a result, boys and girls could be perceived to have similar needs for good communication skills, as indicated by the findings.

Consistent with Simmons and Johnston's (2007) findings where more Indian than European Canadian mothers indicated that boys and girls have different communication goals, Malaysian mothers adopted a similar belief. It may be possible that Malaysian mothers have different expectations for boys and girls, or particular viewpoints concerning

communication with sons and daughters. A conversation between the author and one of the research participant post-data collection is highlighted. This particular mother of three, (two boys and a girl) remarked, *“boys can be rough and aggressive at times, so when I talk to them, I need to be firm, brief and direct with them. My girl is more gentle than the boys, so when I talk to my daughter, I use a soft voice and explain to her why she can and cannot do things, and she understands. I cannot explain things in detail to the boys as they cannot understand my long speech. So, I just get to the point, using a firm voice. I find that my sons listen to me when I use a firm voice and brief words. For my girl, my soft voice and lots of explanation (in words) helps”*.

The differential treatment and expectations of sons and daughters may influence intervention goals and expected outcomes. It may be worthwhile to find out if families have different communication needs for boys and girls, and what these may consist of, in order to facilitate generalization of therapy goals at home and to synchronize therapy expectations.

### **3. Teaching and learning in young children**

These values concern belief items on intentionality, teaching and early academic achievement, and learning, verbal reprimands and corrections and will be discussed in the next section.

**Intentionality.** Far fewer New Zealand mothers reported agreement with the statement, “children ought to be taught or told what to say as they are too young to think on their own” as compared to Malaysian mothers. Consistent with the intentionality model, Western Caucasian mothers may see the child as an individual who already knows what he or she wants to communicate but because of the yet to be developed verbal skills, mothers may *draw out* the child’s intentions (and not teach) by using specific verbal behaviours, including use of interpretations (Bloom, et al., 2001). In contrast, slightly more than two-thirds of

Malaysian mothers were of the opinion that young children were unable to think on their own and therefore it was vital for parents to tell or teach them what to say. The notion of teaching or telling children what to say because they are too young to think on their own appears to be a commonly held view among Asian cultures (Chan & Chen, 2011) and was reflected in the Malaysian sample. Whilst it cannot be certain if the mothers in the Malaysian sample were familiar with Bloom et al's (2001) intentionality model, it would be interesting to find out if there was a shift in beliefs if scientific knowledge was considered along with cultural and religious beliefs. Perhaps it is the very absence of these cultural elements among Western societies, plus the strong belief in recognizing the child with the ability to think on their own (in tandem with the individualist dimension) had resulted in a significantly less New Zealand mothers agreeing that it is important to teach young children.

**Teaching and early academic achievement.** More than half of Malaysian mothers believed it was more important for parents to teach children, instead of having fun during playtime. In contrast, only 1% of New Zealand mothers shared the same belief. This finding corresponds with another survey item on early academic achievement. More Malaysian mothers, when compared to New Zealand mothers, indicated agreement it was important to emphasize early academic achievement in young children. The results of this study affirm Hewitt and Maloney's (2010) findings with mothers of pre-schoolers in Malaysia. The authors reported that most Malaysian mothers preferred their children learning academic activities (e.g., alphabet, mathematics, phonics) and viewed child-oriented play (fun) activities (e.g., sand, water and toy play) as a waste of time within a preschool context. Although the present study did not stipulate the type of play or academic activities for mothers to consider in the survey, Malaysian mothers' preference for teaching children during playtime, instead of having fun, and emphasis on early academic achievement were indicated in the context of mother-child interaction within the home environment. This

suggests that Malaysian mothers advocate teaching and academic success in their young children both at home and in preschool. As such, teaching during playtime may be a priority and precede all other aspects, including having fun playing. Thus, it was not surprising that in terms of practice, twice as many Malaysian than New Zealand mothers indicated they frequently engaged in teaching activities with their children during playtime.

**Learning, verbal reprimands and direct corrections.** Malaysian and New Zealand mothers differed significantly in their beliefs related to children's learning and correction of speech errors. More Malaysian than New Zealand mothers indicated agreement that children learnt best when given instructions. The need to teach or instruct young children appears to be a virtue valued by most Malaysian mothers in the sample and by families of Puerto Rican, Chinese Taiwanese, Chinese, Mexican-American, West African, Southeast Asian origins (Jose et al., 2000; Johnston & Wong, 2002; Kummerer & Lopez-Reyna, 2006; Harwood et al., 1999; Hwa-Froelich & Westby, 2003; Law, 2000; McCollum et al., 2000). As a result, Malaysian mothers may structure their conversation with children to fulfil their own teaching goals and may be less likely to follow their children's lead. In order to attain specific teaching goals, Malaysian mothers may perceive the need to explicitly correct their children's speech errors. Therefore, it was not surprising that most of Malaysian mothers, when compared to less than half of New Zealand mothers, believed it was important for parents to correct their children's speech errors. This finding was consistent with Simmons and Johnston's (2007) study where more Indian mothers indicated that parents ought to correct their children's speech errors, when compared to European Canadian mothers. However, in Johnston and Wong's (2002) study, both Chinese and European Canadian mothers indicated similar agreement that parents ought to allow children to make their own discoveries, even if they made mistakes, indirectly suggesting that correcting children's speech errors was not as valued.

Concomitantly, a clear and large difference among Malaysian and New Zealand mothers was in the use of verbal reprimands (i.e., use of “that is wrong” or “say it properly”) and direct corrections. More Malaysian mothers and far fewer New Zealand mothers reported that they frequently reprimanded children’s speech mistakes and used explicit corrections with their children during interactions. Specifically, these corrections were related to children’s wrong word use and omitted words in sentences. In addition, the use of direct modelling (e.g., “Say ‘ball’” or “Say, ‘big car’”) was a frequent practice with more Malaysian than New Zealand mothers, suggesting an emphasis on getting the child to repeat after adult, instead of imitating children. Imitation is another verbal interaction behaviour that is recommended in language intervention programs (Pepper & Weitzman, 2004). The results of the present study indicate Malaysian mothers in the sample favoured the use of verbal reprimands and direct corrections with their children, affirming current literature that Asian cultures tend to use parental authority, teaching-oriented activities, and direct corrections when teaching children (Chan & Chen, 2011). Consistently, Chinese and Indian mothers (in Johnston & Wong, 2002 and Simmons & Johnston, 2007) were found to have reported more frequent use of direct corrections with their children, when compared to their respective European Canadian counterparts (although no significant group difference was reported in both these studies).

**Materials used to aid word learning.** Malaysian and New Zealand mothers differed in their preferred use of materials to aid word learning in children. In particular, more Malaysian than New Zealand mothers reported frequent use of educational DVDs, television or computer programs, and flashcards to teach children words. Malaysian mothers’ preference for ‘academic-type’ materials and activities to teach children words suggest an emphasis on early academic achievement in young children, consistent with Hewitt and Maloney’s (2010) findings. In addition, this study’s result is consistent with Johnston and Wong’s (2002) where

more Chinese than European Canadian mothers reported frequent use of flashcards and picture books to teach children words. In contrast, more New Zealand than Malaysian mothers reported frequent book reading with children, drawing parallel to European Canadian mothers who reported higher frequency of reading books to their children in comparison to their Asian counterparts (Johnston & Wong, 2002; Simmons & Johnston, 2007). The results indicate that book reading with children could be a practice that is more frequently carried out by families of Western Caucasian origin than of Asian origin. Although book reading is highly recommended to develop young children's (including bilingual children) verbal language and literacy skills (Kalia, 2007; McDonnell, Friel-Patti & Rollins, 2003; Valdez-Menchaca & Whitehurst, 1992), other options to develop these skills (e.g., oral stories) could be explored with parents who do not engage in book reading with their children as much. It might also be worthwhile to explore book reading practices and the ensuing verbal interaction behaviours used with Malaysian mothers in order to better understand the beliefs and practices surrounding texts and when recommending book reading to families.

#### ***2.6.1.2 Similarities in beliefs and practices***

Although the results of this study show a number of distinct differences in the beliefs and practices related to mother-child interactions among Malaysian and New Zealand mothers, there were a few similarities. In terms of beliefs, both groups of mothers indicated similar agreement in the importance of parents playing with their young children and children learning important things while playing. This indicates that whilst play is valued by both cultures, the activities within playtime are viewed differently, that is, emphasis on teaching instead of fun. In addition, both groups of mothers were less likely to agree that traditional healing or medicine would help cure children's speech and language difficulties, contradicting Baskaran's (2000) study where more than half of Malaysians in her sample

indicated their attitudes and motivation towards speech and language disorders was to “leave it in the hands of God”. The findings of the present study show that Malaysian mothers were less likely to consult traditional medicine or spiritual healers to cure communication difficulties, although Chew et al (2011) and Laderman (1996) reported that some Malaysians may still prefer otherwise when faced with other type of disabilities or diseases.

In terms of reported interaction practice, Malaysian and New Zealand mothers indicated similar frequency in using comments (as a verbal interaction behaviour) when playing with their children and encouraging children to play with objects in various ways, suggesting both cultures valued scaffolding language and creativity (make-belief) and not just practical play. In addition, both groups of mothers reported frequent use of verbal praises with their children. Malaysian and New Zealand mothers reported similar levels of frequency in using attention and behaviour directives with their children, contradicting previous study findings that directives was more frequently used by Asian mothers than Western Caucasian mothers (e.g., Bornstein et al, 1990; Cheah & Rubin, 2003; Vigil, 2002).

### **2.6.2 Malaysian mothers’ reported interaction patterns**

Overall, the results showed Malaysian mothers of Malay, Chinese and Indian ethnicities were more similar than different in their beliefs and practices related to verbal and interaction. In particular, mothers of Malay and Indian ethnicities were more alike in their beliefs and practices when compared to mothers of Chinese ethnicity. However, Malaysian Chinese mothers were found to have indicated statistically different, ( $p < .001$ ), on six beliefs items when compared to Malaysian Malay and Malaysian Indian mothers. Ethnicity had a large effect size (measured as Cramer’s  $V > .35$ , Cohen, 1988) for belief statements on accepting grandparents’ or elders’ advice, teaching during playtime, emphasis on early academic achievement in children, children asking too many questions, parental control of

conversations with children, and inhibiting individual independence in children. In terms of practices related to parent-child interactions, Malaysian mothers statistically differed, ( $p=.001$ ), in only one discourse practice item, that is, turn-taking with their children, which yielded a moderate effect size. The results showed that Malaysian mothers differed in few practice statements (mostly categorized under behaviour and response control utterances and materials used to aid word learning). However, these did not reach statistical significance. Malaysian mothers were found to be more similar in their practices, rather than beliefs related to parent-child interactions. The differences and similarities in beliefs and practices are discussed within three themes, that is, family and child-rearing values, teaching and learning in young children, and value of talk. Possible interpretations for these differences will be considered.

#### ***2.6.2.1 Differences in beliefs and practices***

##### **1. Family and child-rearing values**

A clear strong difference between the three groups of Malaysian mothers was with the involvement of grandparents or elders in raising young children. More Malaysian Malay mothers than Malaysian Chinese mothers (Cramer's  $V = .602$ ) were likely to agree that it was important for parents to accept grandparents' or elders' advice in raising young children. Likewise, more Malaysian Indian than Malaysian Chinese mothers (Cramer's  $V = .561$ ) accepted grandparent's or elders' advice. Although Malaysian mothers valued close relationships with grandparents and elders in the family (Hossain, et al 2005), this may not necessarily equate to accepting grandparents/elders advice in raising young children, as indicated by Malaysian Chinese mothers in the sample. It may be possible that Malaysian Chinese mothers viewed children's upbringing as the responsibility of both mother and father only, and thus think it was not important to accept grandparents' or elders' advice. The



demographic data within the Malaysian group indicate that nearly two-thirds of Malaysian Chinese mothers in the sample held a university degree. In contrast, less than half of Malaysian Malay and Malaysian Indian mothers in the sample held a degree. The difference was statistically significant. This suggests that education level may influence mothers' view that it was important to accept grandparents' or elders' advice in raising children.

When compared to Malaysian mothers of Chinese and Malay ethnicities, mothers of Indian ethnicity were more likely to agree that "parents ought to do things for their young children, even if their children can do it themselves". The results suggest Malaysian Indian mothers may less likely to emphasis early independence skills in their children, when compared to mothers of Malay and Chinese ethnicities. Instead, Malaysian Indian mothers may take delight in pampering their children, thus reinforcing Kakar and Kakar's (2007) view that Indian parents tend to indulge their young children in order to mould them to be part of the family and community.

## **2. Teaching and learning in young children**

Although all Malaysian mothers agreed that children learnt important things while playing, three quarter of Malaysian Malay mothers, when compared to less than a third of Malaysian Chinese mothers believed it was important for parents to teach their children, rather than simply have fun with them, during playtime. In addition, Malaysian Malay and Malaysian Indian mothers were found to more likely emphasis on early academic achievement in young children than Malaysian Chinese mothers. One possibility could be Malaysian Malay and Malaysian Indian mothers may have more likely viewed teaching or academic achievement as a serious learning matter, that need to be undertaken seriously without fun. The concept and benefit of learning through fun activities may be either unfamiliar or not fully comprehended by Malaysian mothers, as explained by Hewitt and

Maloney (2010). In addition, children's academic success and achievement is of prized value as it is often a benchmark of parents' duty and love, and family identity, reputation and upbringing in Chinese and Indian families (Kakar & Kakar, 2007; Ng et al., 2013). Contrary to Hewitt and Maloney's findings, and Chao's, Kakars' and Ng and colleagues' viewpoints, Malaysian Chinese mothers were found to less likely to agree that teaching, rather than having fun with children during playtime was important, and less likely to emphasize early academic achievement in young children than their Malaysian counterparts. This study finding lends support to Johnston and Wong (2002) explanation that Chinese mothers were able to distinguish the "age of understanding" and "age of not understanding" in their children. As such they did not create much teaching opportunities for their children and did not view academic achievement as a priority for young children who were believed to have yet to attain the "age of understanding". Malaysian Chinese mothers in the sample could have embraced similar viewpoints. Thus it was not surprising that less Malaysian Chinese mothers, when compared to both Malaysian Malay and Indian mothers reported the frequent use of flashcards, educational DVDs, television or computer programs to aid children's word learning. This particular finding was different but not at the identified statistical significant level set for the study.

### **3. Value of talk**

More than three quarters of Malaysian Malay mothers, compared to less than half of Malaysian Chinese mothers agreed that children asked too many questions, a difference that yielded a moderate effect. The result is puzzling as although a higher percentage of Malaysian Malay mothers valued talkativeness in children, when compared to Malaysian Chinese and Indian mothers, Malaysian Malay mothers strongly believed children asked too many questions. It may be that children's questioning (too many) is seen as going against the

Malay customs that accentuate respect for the elderly, politeness or etiquette (*budi*) and good behaviour (Faruqi, 2011; Hossain, 2014; Hossain et al., 2005). Children's talkativeness, in this instance may not encompass children asking questions. It may be worthwhile to note that whilst mothers of Malay and Indian ethnicities indicated similar high agreement that children asked too many questions, slightly more Malaysian Indian mothers, than Malaysian Chinese mothers believed that children asked too many questions, although no statistical significant difference was noted at the targeted value. This suggests that mothers of Indian ethnicity in both Malaysian and Canadian samples (Simmons & Johnston, 2007) shared similar viewpoints on children asking questions.

The results reveal that 16% of Malaysian Indian mothers in the sample indicated agreement with the statement that 'young children must speak to adults only when they are spoken to'. Although no significant group difference was observed, fewer Malaysian Chinese and Indian mothers indicated similar agreement. This finding lends some support to Williamson's (1979) (cited in van Kleeck, 1994) comment that Malaysian Indian children were not expected to speak with adults unless they were spoken to. Although the scope and nature of Williamson's study is not known, there appears to be some Malaysian Indian mothers who still shared similar belief with the Malaysian Indian community in 1979.

The study findings revealed more Malaysian Malay and Indian mothers, than Malaysian Chinese mothers believed it was important for parents to control their children's conversation to enable them to learn to talk better. Given that teaching and academic achievement was emphasized by more Malaysian Malay and Indian mothers than Malaysian Chinese mothers, it may be possible that parental control of conversations will provide mothers with greater opportunities and scope to engage in a teaching agenda/activity. Therefore, it was not surprising that more Malaysian Chinese mothers, than Malaysian Malay and Indian mothers, reported frequent practice of turn-taking with their children. This finding

suggest Malaysian Malay and Indian mothers may more likely than Malaysian Chinese mothers, take higher turns in conversations, as a means to control conversations with a view to help children learn to talk better.

#### ***2.6.2.2 Similarities in beliefs and practices***

Malaysian mothers, irrespective of their ethnicities, reported similar beliefs in aspects related to intentionality in children, play with parents and learning in playing, family values, use kinship titles to address adults and not first names, asking children test questions and correcting their errors. The mothers also indicated the importance of adjusting their talk to children's level and use of gesture. In addition, mothers expressed similar views in that boys and girls had different communication needs, parents and professionals (who work with young children) have equal expertise, and did not favour use of traditional healing or medicine to cure children's speech-language difficulties. These similarities suggest that Malaysian mothers share more values that are common than different, supporting Lian and Abdullah's (2001) viewpoint that Malaysians, irrespective of ethnicity, are comparable in their belief systems. However, given that the study did not consider the influence of mothers' educational level and other related factors, for example, children's age, on beliefs, the interpretation of the results are viewed with caution.

In terms of practice, Malaysian mothers reported similar frequent practice of almost all practice statements in the survey, with the exception of taking turns with children. Malaysian mothers reported similar high frequent practice for all survey items categorized as conversation-eliciting and language-modelling utterances and for almost all survey items listed as behaviour- and response-control utterances (also referred to as directive interaction patterns). This pattern indicates that although Malaysian mothers may use frequent directive

interaction patterns with their children, it does not mean that it is at the expense of using conversation-eliciting and language-modelling utterances with their children, or vice versa.

## **2.7 CONCLUSION**

Overall, Malaysian and New Zealand mothers in the sample differed in a broad range of beliefs and practices related to mother-child interactions. The findings are consistent with Johnston and Wong (2002) and Simmons and Johnston (2007). In contrast, the subgroup of Malaysian mothers, that is, mothers of Malay, Chinese and Indian ethnicities, showed more similarities, than differences in their beliefs and practices, although some group differences were evident. These cross-cultural comparisons of reported beliefs and practices are noteworthy as very few studies have examined these cultural groups. Further to this, there are also very few studies that have observed interaction patterns among these cultures. An observational study of mothers' interaction patterns would be particularly useful to quantify interaction practices to identify differences. Given that parent-based language intervention programs recommend the use of specific verbal interaction behaviours with children (e.g., Pepper & Weitzman, 2004), differences in interaction practices among diverse population groups may provide valuable insight in implementing culturally appropriate programs. To this extend, a sample of the Malaysian mothers were observed interacting with their children.

## CHAPTER THREE

---

### Study Two:

#### Observed Mother-Child Interaction Behaviours among Malaysian Mothers

### **3.1 AIMS OF THE PRESENT STUDY**

The purpose of this study was to examine (a) the interaction behaviours that Malaysian mothers of different ethnicities use with their children, and (b) the association between mothers' verbal interaction patterns and children's language measures. In addition to two other questions asked in Study One, the specific research questions for this study are:

1. What verbal and interaction behaviours do Malaysian mothers use when interacting with their young children and do these differ across ethnic groups?
2. What is the relationship between
  - a) measures of mothers' and children's verbal productivity?
  - b) measures of mothers' interaction behaviours and children's verbal productivity?

### **3.2 METHODS**

This cross-sectional study employed a descriptive observational design to examine parent-child interactions within a clinical setting.

#### **3.2.1 Ethical consideration**

The research approval reference 2012/65 covers the scope of this study. In addition, all participants signed an informed consent form (Appendix I) prior to taking part in the study. Each mother received MYR\$10 as a reimbursement for car park fees (at the Kuala Lumpur location only) and their young child, a storybook, following participation. The data was collected in Malaysia from the 13<sup>th</sup> April to 17<sup>th</sup> September 2013.

#### **3.2.2 Participants**

The participants were a subsample of Malaysian mothers who completed Study One, and volunteered to take part in the second study along with one of their children who was 2-

years old, 3-years old or 4-years old. In addition, following the same participant criteria used in Study 1, only mothers who conversed in English or Bahasa Malaysia with their children at home were included in the observational study. This condition was established to reflect consistency with Study 1 participant criteria and to minimize the complexity of transcribing language samples in multiple languages. All children who participated in the study met the following criteria (as reported by the mother in the Study One Questionnaire). The children, at the time of study

1. did not have communication, speech or language delay, academic or learning difficulties, behavioural or social difficulties, physical difficulties, hearing difficulties or diagnosed with a medical condition;
2. were communicating at an average of two words or more per sentence;
3. spoke his or her first words before two years of age;
4. were able to follow verbal (spoken) instructions or directions; and
5. did not receive any previous speech-language therapy.

Children who did not meet the above criteria were excluded from the study and data analysis.

The aim of the study was to recruit at least 20 mother-child dyads in each group. However, time and cost factors, a common constraint in observational studies (Redmond & Griffith, 2003), meant data collection had to end on 17<sup>th</sup> September 2013. Data were collected from 57 mother-child dyads, representing mothers who identified themselves as Malaysian Malays (n=17), Malaysian Chinese (n=20) and Malaysian Indians (n=20). However, only data from 48 mother-child dyad interactions were analysed. Six video recordings were excluded for the following reasons: (a) the interaction was in a language other than Bahasa Malaysia or English, (b) the length of the mother-child interaction did not meet the study criteria, i.e. too short, and (c) the participants' survey results were excluded in the final analysis of Study 1 (as it did not meet the ethnicity criteria). The participants'



demographic information, as provided in Section C of the Questionnaire is summarised in three sections below, that is, mothers', children's and family characteristics.

## 1. Mothers' characteristics

**Age.** More than half of the mothers (68.8%,  $N = 33$ ) who took part in the observational study were in their thirties (Total  $M = 34.7$  years,  $SD = 4.603$ ), with an age range of between 27 years old and 45 years old. The means, standard deviations and minimum to maximum age ranges within the three groups are presented in Table 3.1.

Table 3.1

*Means and Standard Deviations for Mothers' Age across Groups*

Ethnicity	Mothers' Age			
	Total $N$	$M$	$SD$	$Min-Max$
Malaysian Malay	17	31.47	3.64	27-38
Malaysian Chinese	16	37.06	3.99	32-45
Malaysian Indian	15	35.87	4.29	29-42

There was a statistically significant difference in mothers' age between all three groups, as determined by one-way ANOVA ( $F(2, 45) = 9.109$ ,  $p < 0.001$ ), with an effect size of  $\eta^2 = .288$ . Cohen (1988) recommended the use of partial eta square ( $\eta^2$ ) in ANOVA as a means to interpret effect size and considered an effect size of 0.138 as large, 0.06 as medium and 0.01 as small. A Tukey's post-hoc revealed that Malaysian Malay mothers' age was statistically significantly younger in comparison to both Malaysian Chinese mothers ( $M = 37.06$  years,  $SD = 3.991$ ,  $p < 0.001$ ) and Malaysian Indian mothers ( $M = 35.87$  years,  $SD = 4.291$ ,  $p = 0.009$ ). There were no statistically significant differences in age between the Malaysian Chinese and Malaysian Indian mothers ( $p = .681$ ).

**Occupation.** One quarter ( $N = 12$ ) of the sample reported that they were full-time stay-at-home mothers. Most working mothers were employed in jobs categorized as Level Four (37.5%,  $N = 18$ ) and Level Three (20.8%,  $N = 10$ ) of the International Standard Classification

of Occupations (International Labour Office Geneva, 2012). These occupational levels generated the greatest income potential in comparison to other levels. There were no statistically significant differences between the three groups ( $F(2, 45) = .756, p = .476$ ).

**Education level.** Slightly more than half of the sample (58.3%,  $N = 28$ ) held a university bachelor's degree or advanced degree. No statistically significant difference between groups was noted ( $F(2, 45) = 3.014, p = .059$ ). However, there was a higher percentage of Malaysian Chinese mothers with university degrees (Table 3.2) in comparison to Malaysian Malay mothers ( $p = .052$ ).

**Languages always/often used with child.** More than two-third of the sampled mothers (81.3%,  $N = 39$ ) used English frequently with their children. Bahasa Malaysia was frequently used by 39.6% ( $N = 19$ ) of the mothers. Mandarin and Tamil were frequently used by 6.3% ( $N = 3$ ) and 18.8% ( $N = 9$ ) of the mothers respectively. In addition, 12.5% of the mothers reported frequent use of Sarawak Malay ( $N = 1$ ), Iban ( $N = 2$ ), Cantonese ( $N = 2$ ) and Urdu ( $N = 1$ ) with their children. Most of the mothers (93.8%) in the sampled population reported they were either bilingual ( $N = 14$ ) or multilingual ( $N = 31$ ). In addition, 89.6% of the mothers reported their children were either bilingual ( $N = 15$ ) or multilingual ( $N = 28$ ). This suggests that mothers could be frequently using more than one language with their children.

**Hours spent talking with child per day.** More than half of the mothers in the sample (64.6%,  $N = 31$ ) reported that they spent three to more than five hours per day talking with their children. There was no statistically significant difference between groups ( $F(2, 45) = 1.462, p = .243$ ). Table 3.2 displays the demographic characteristics of the three groups of mothers who participated in the study.

Table 3.2

*Demographic Data for Malaysian Mothers' Characteristics as a Percentage\* of the Group*

Variable	Malaysian mothers					
	Malaysian Malay		Malaysian Chinese		Malaysian Indian	
	%	(Total N)	%	(Total N)	%	(Total N)
Group <i>N</i>	100.0	(17)	100.0	(16)	100.0	(15)
Marital status						
Married	100.0	(17)	93.8	(15)	100	(15)
Single	0	(0)	6.3	(1)	0	(0)
Occupation <sup>a</sup>						
Skill Level Four	23.5	(4)	37.5	(6)	53.3	(8)
Skill Level Three	29.4	(5)	18.8	(3)	13.3	(2)
Skill Level Two	29.4	(5)	0	(0)	0	(0)
Skill Level One	0	(0)	0	(0)	0	(0)
Stay-at-home mother	17.6	(3)	31.3	(5)	26.7	(4)
Did not state	0	(0)	12.5	(2)	6.7	(1)
Educational level						
University degree	41.2	(7)	81.3	(13)	53.3	(8)
No university degree	58.8	(10)	18.8	(3)	46.7	(7)
Languages always/often used with child*						
English	47.1	(8)	100.0	(16)	100.0	(15)
Bahasa Malaysia	94.1	(16)	0	(0)	20.0	(3)
Mandarin	0	(0)	3	(18.8)	0	(0)
Tamil	0	(0)	0	(0)	60.0	(9)
Other languages	17.7 <sup>b</sup>	(3)	12.6 <sup>c</sup>	(2)	6.7 <sup>d</sup>	(1)
Hours spent talking with child per day						
Less than one hour	0	(0)	0	(0)	6.7	(1)
1-2 hours	0	(0)	12.5	(2)	13.3	(2)
2-3 hours	17.6	(3)	25.0	(4)	0	(0)
3-4 hours	5.9	(1)	18.8	(3)	6.7	(1)
4-5 hours	23.5	(4)	12.5	(2)	26.7	(4)
5 hours or more	52.9	(9)	31.31	(5)	46.7	(7)

*Note.* \*some percentage rows do not add up to 100 as participants responded to all categories that were applicable to them. <sup>a</sup>A description of each level of Occupation is listed in Appendix C. <sup>b</sup>Sarawak Malay (1), a dialect of Bahasa Malaysia, and Iban (2), both spoken by Malaysians native to the state of Sarawak. <sup>c</sup>Cantonese. <sup>d</sup>Urdu.

## 2. Children's characteristics

**Age.** Most of the children (52.1%,  $N = 25$ ) were 3 years old ( $M = 3.2$  years,  $SD = .684$ ), with fewer children aged 2 years (16.7%,  $N = 8$ ). The mean age for children of Malaysian Malay, Malaysian Chinese and Malaysian Indian mothers were 3.35-, 3.0- and 3.07 years old

respectively. Mothers across ethnic groups had children of comparable age ( $F(2, 45) = 1.163$ ,  $p = .294$ ).

**Gender.** Boys ( $N = 23$ ) and girls ( $N = 25$ ) were almost equally distributed in the total sample and were comparable across ethnic groups ( $\chi^2(2, N = 48) = .764$ ,  $p = .682$ ).

**Languages child always/often hears at home.** More than two-thirds (81.3%,  $N = 42$ ) of the mothers in the sample reported their children heard English frequently at home. Less than half (45.9%,  $N = 21$ ) of the mothers reported their children heard Bahasa Malaysia at home. Eight mothers (16.7%) in the sample reported their children frequently heard Mandarin at home. This contrasts to 20.8% ( $N = 10$ ) of the mothers who reported likewise for Tamil. In addition, six mothers (12.5%) reported their children heard the following languages at home, that is, Sarawak Malay ( $N = 1$ ), Iban ( $N = 1$ ), Cantonese ( $N = 2$ ), Hokkien ( $N = 1$ ), and Urdu ( $N = 1$ ).

**Person child spends most of his or her daytime with.** Nearly half of the sampled mothers (47.9%,  $N = 23$ ) reported their children spent most of their daytime with babysitters, maid, teachers or carers. Seventeen children (35.7%) in the sample spent their daytime with extended family members (e.g., grandparents, cousins, etc.), whilst the rest of the children (16.7%,  $N = 8$ ) spent their daytime with immediate family members (i.e., mother, father and their other children). There were no statistically significant group differences ( $F(2, 45) = 1.335$ ,  $p = .273$ ). The between-groups demographic characteristic of the children who participated in the study is displayed in Table 3.3.

Table 3.3

*Demographic Data for Children's Characteristics as a Percentage\* of the Group*

Variable	Malaysian mothers					
	Malaysian Malay		Malaysian Chinese		Malaysian Indian	
	%	(Total N)	%	(Total N)	%	(Total N)
Group <i>N</i>	100.0	(17)	100.0	(16)	100.0	(15)
Age						
2-years old	0	(0)	25.0	(4)	26.7	(4)
3-years old	64.7	(11)	50.0	(8)	40.0	(6)
4-years old	35.3	(6)	25.0	(4)	33.3	(5)
Gender				(0)		(0)
Male	41.2	(7)	56.3	(9)	46.7	(7)
Female	58.8	(10)	43.8	(7)	53.3	(8)
Languages always/ often hears at home*						
English	64.7	(11)	100.0	(16)	100.0	(15)
Bahasa Malaysia	88.2	(15)	25.1	(8)	20.0	(3)
Mandarin	0	(0)	43.8	(7)	6.7	(1)
Tamil	0	(0)	0	(0)	66.7	(10)
Other languages	11.8 <sup>a</sup>	(2)	18.8 <sup>b</sup>	(3)	6.7 <sup>c</sup>	(1)
Person child spends most of his or her time with						
Immediate family <sup>d</sup>	23.5	(4)	37.5	(6)	46.7	(7)
Extended family <sup>e</sup>	11.8	(2)	25.0	(4)	13.3	(2)
Other <sup>f</sup>	64.7	(11)	37.5	(6)	40.0	(6)

*Note.* \*some percentage rows do not add up to 100 as participants responded to all categories that were applicable to them. <sup>a</sup>Iban (1), Sarawak Malay dialect (1). <sup>b</sup>Cantonese (2), Hokkien (1). <sup>c</sup>Urdu. <sup>d</sup>Includes mother, father and other children. <sup>e</sup>Includes grandparents, cousins, etc. <sup>f</sup>Includes babysitters, maid, teachers and carers.

### 3. Family characteristics

With the exception of one, all mothers in the sample reported their spouse's occupation. Most of their husbands (70.8%,  $N = 34$ ) were employed in jobs that were classified as Level Four, i.e.; occupations that drew the highest income capacity (International Labour Office Geneva, 2012). Six mothers (12.5%) reported that their spouse held Level Three jobs and seven (14.6%) mothers had spouses with Level Two jobs. No one held Level One jobs, that is, occupations that drew the least income potential. Although differences were noted between the groups, a one-way ANOVA revealed these were not statistically significant ( $F(2, 45) = 2.710, p = .077$ ).

More than half of the mothers (56.3%,  $N = 27$ ) in the sample reported an average of two children per family ( $M = 2.27$ ,  $SD = .917$ ). There was no statistically significant difference between groups ( $F(2, 45) = .347$ ,  $p = .709$ ). Half of the sample (50%,  $N = 24$ ) reported that their families stayed with extended family members and a live-in maid (or house-helper). There were no statistically significant difference between groups ( $F(2, 45) = .409$ ,  $p = .388$ ). Table 3.4 displays the family characteristics of the three groups of participants.

Table 3.4

*Demographic Data for Family Characteristics as a Percentage\* of the Group*

Variable	Malaysian mothers					
	Malaysian Malay		Malaysian Chinese		Malaysian Indian	
	%	(Total N)	%	(Total N)	%	(Total N)
Group $N$	100.0	(17)	100.0	(16)	100.0	(15)
Father's occupation						
Level Four	47.1	(8)	81.3	(13)	86.7	(13)
Level Three	17.6	(3)	12.5	(2)	6.7	(1)
Level Two	35.3	(6)	0	0	6.7	(1)
Level One	0	(0)	0	0	0	(0)
Stay-at-home father	0	(0)	0	0	0	(0)
Did not state	0	(0)	6.3	(1)	0	(0)
Number of children				(0)		(0)
One	11.8	(2)	12.5	(2)	20.0	(3)
Two	64.7	(11)	62.5	(10)	40.0	(6)
Three	11.8	(2)	25.0	(4)	26.7	(4)
Four	5.9	(1)	0	(0)	6.7	(1)
Five	5.9	(1)	0	(0)	6.7	(1)
Live with extended family						
Yes	17.6	(3)	31.3	(5)	40	(6)
No	82.4	(14)	68.8	(11)	60	(9)

*Note.* \*some percentage rows do not add up to 100 as participants responded to all categories that were applicable to them.

### 3.2.3 Procedure

Participants who indicated interest in taking part in a follow-up observational study (with their young child), upon completing the Questionnaire, received a Study 2 information sheet (Appendix I). Each mother was contacted by telephone to explain the study. The use of

a video camera and audio recording device, issues concerning confidentiality and storage, and the right to withdraw from the study were discussed with each participant. Once participation was confirmed, an appointment was scheduled for mothers to visit either the Kuala Lumpur (speech therapy clinic) or Selangor (school) location. These two regions were chosen to facilitate travel for participants from both sides of the city. The room set-up in both locations was similar; that is, the rooms were enclosed and quiet, with no frames on the wall, with child-friendly table and chairs, or floor mat. A portable fish aquarium was strategically placed in the room. A Canon Legria HF R36 HD Camcorder was used to record sessions in full HD 1920 x 1080p video quality. The camcorder was mounted on a self-standing tripod in the room and was positioned to capture mother-child interaction without the presence of the author in the room. In addition, a back-up audio recording device, Sony MP3 Digital Notetaker (Model #ICDPX440) was placed next to the mother in the room.

The observational study consisted of two parts. Upon arrival at the research location, the mother-child dyad was led to an enclosed room with an aquarium. First, the mother was asked to interact with her child and was given the following instructions, “I would like you to talk and interact with your child as you would normally do at home for 5-7 minutes. I will then return with a box of toys”. Next, the author re-entered the room with the following instructions: “Here is a box of toys. I would like you to talk and interact with your child as you would normally do at home for 15 minutes”. Mothers were encouraged to interact in the language they most commonly used when conversing with their children at home. No others were present in the room during these interactions.

The aquarium contained healthy, active, colourful fish and sea plants to stimulate mother-child conversations and to ‘break the ice’ for the subsequent session with toys. The box contained age-appropriate toys, which included a variety of toy animals, food and cutlery

items, transport vehicles, colourful balls, hand puppets, a miniature people set, one puzzle set, a block set, and a scarf.

### ***3.2.3.1 Language transcription***

Although the recorded timing for each mother-child interaction varied between 17-25 minutes. However, only the first 15-minutes of the recording (interaction when given toy box) were transcribed and coded using the Systematic Analysis of Language Transcripts (SALT) (Miller & Chapman, 1981; Miller, Andriacchi, Nockerts, Westerweld & Gillon, 2012). A 15-minute language sample was considered appropriate, given that 7- and 10-minutes of language samples have also generated reliable language measures for verbal productivity (Heilmann, Nockerts & Miller, 2010; Guo & Eisenberg, 2015). Although Gavin and Giles (1996) found 20-minute language sample produced a higher reliability than a 12-minute sample, they concluded that parent-child interaction consisting of 175 child utterances (complete and intelligible) would generate an adequately high measure of reliability for analysis. The present study generated a total sample average size of 466 mother and child utterances (complete and intelligible). Specifically, there was an average of 310.6 mother utterances (range: 211-602), and an average of 155 child utterances (range: 55-243) in the sample.

The language samples (in English and Bahasa Malaysia) were orthographically transcribed using SALT transcription conventions (Miller et al., 2012; Klee, 2010). The author transcribed the language samples directly onto the SALT-NZ 2012 Software New Zealand Version 2012.2.0 (Miller, Gillon & Westerweld, 2012). All utterances produced by mother and children were transcribed. However, only partly and completely intelligible utterances were analysed. Consistent with the standard coding conventions, utterances were segmented into an independent clause and its modifiers, that is, C-units (communication



units). The Standard SALT Transcription Conventions (extracted from the SALT User Guide (Miller et al., 2012) that were used in the study are listed in Appendix K. All other standard SALT conventions, e.g., morphemes, were not transcribed for this study. For example, morphemes were not segmented as this study used Mean Length of Utterance in words (MLUw) to measure sentence length. The rationale for this decision is stated in Section 3.4.1.1 Malaysian slang words, mostly used as suffixes, were enclosed with { } and not analysed. These words included, use of *lah*, *la*, *lor*, *aah*, *ah*, *meh*, *ke*, *mar* and *ar*.

### **3.2.3.2 Coding system**

In order to answer the research questions, a coding system for maternal interaction behaviours was developed with reference to past studies. Codes were developed for words in languages other than English. For example, if the primary language of interaction was English, words in any other language were denoted with a [ ]. Table 3.5 provides the definition for each verbal interaction behaviour with the corresponding references and examples. All mothers' utterances were manually coded. SALT automatically calculated the frequency occurrence for each coded behaviour. In addition to the behaviours listed in Table 3.5, two other interaction variables, balanced turn-taking and conversational dominance, were used in the study. Tannock (1988) pointed out that mothers who took more turns when communicating with children did so in an attempt to get their children to talk more but this indirectly impeded children's communication. Likewise, maternal conversational dominance provided children with fewer opportunities to verbalize (Tulviste, 2004).

Table 3.5

*Definition and Examples of Interaction Behaviours Used in the Study*

Variable/Behaviours	Definition	Example
<b>1.BEHAVIOUR CONTROL</b>	<b>Includes all utterances that direct or manage child's behaviour</b>	
a) Attention Calls or Directives [1B8]	“Utterances that direct the child's attention to an object or activity or call child's name to get child's attention” (Source: Girolametto et al., 2000, p. 1113).	M: “look here” / “Julian” / “let's see what's in the bag” M: hey!
b) Verbal Prohibitions[1B7]	Utterances that uses a negative command to interfere or stop an act that had already began (Source: Tulkin & Kagan, 1972).	M: “stop that” “don't do that” “no” “don't put inside your mouth”
c) Verbal Reprimands[1B20]	Utterances that rebuke, chastise, criticize, scold, warn or admonish the child (Source: Examples in Thesis).	M: “how many times must I tell you this?” M: “that is wrong! M: you are so forgetful!”
<b>2. RESPONSE CONTROL</b>	<b>These consist of all utterances that restrict the child's responses</b>	
a) Commands or Behaviour directives[2B24]	Utterances that commands, suggests or directs or the child to play in a certain way or exhibit a certain action (Source: Girolametto et al., 2000, p.1113; Tulviste, 2004).	M: “make a snake with the play-dough” “go and get the giraffe”/“come here”/ “take that out of your mouth please” M: “ <i>be careful</i> ” / “ <i>careful</i> ” / “ <i>wait wait</i> ” / “ <i>give me a duck</i> ”. M: “ <i>let mummy do this</i> ” / <i>let's try putting the block here</i> (Examples in Thesis).
b) Direct Modelling[2B27]	Utterances that directly request child to repeat words or Sentences after mother (Source: Lasky & Klopp, 1982).	M: “say ‘ball’” / “say ‘big car’” / “can you say ‘book’?”
c) Direct Correction[2B1]	Mother directly corrects the child by telling child the correct word. If mother asks child to repeat after her, the utterance is coded as Direct Modelling. If mother does not directly correct the mistake but only informs child of the mistake, it is coded as Verbal Reprimand (Source: Examples in Thesis).	E.g., 1, M: “it's a fire-engine, not a car” [2B1]. E.g., 2, C: “daddy walking” M: “daddy walking?” M: “teddy bear walking” [2B1].
d) Directive Yes or No Questions [2B41]	Questions that can be answered with a yes or no but that suggest or direct the child to play in a certain way (Source: Girolametto et al., 2000, p.1113).	M: “can you make a snake?” M: “you want to put or not?”

e) Test Questions[2B21]	Mother asks questions that test child's knowledge. The answer is usually one word and obvious from the context (Source: Girolametto et al., 2000).	M: "what colour is your shirt?" "how many do you see?"
f) Choice Questions [2B42]	This category includes choice questions (Source: Girolametto et al., 2000, p. 1113).	M: "do you want a cookie or a banana?"
g) Imitative Questions[2B43]	Includes utterances where mother directly imitates child's statements but uses a question form	C: "shark eating orange" M: "shark eating orange?"
h) Other Yes or No Questions [2B44]	Includes all other questions that serve to constrain the child's responses. This includes (but not restricted to) questions that are not related to child's ongoing activities;	E.g., 1, M: "did you know that there was a fire at X's school?" E.g., 2, M: "ok?"/ "like mama?" E.g., 3, M: "isn't this bag just like yours at home?" E.g., 4, M: "you like banana right?" / "have you seen a cow?"
<hr/>		
<b>3. CONVERSATION-ELICITING UTTERANCES</b>	<b>Defined as all open-ended WH-questions, clarification questions that repair conversational breakdowns and includes yes or no questions that foster conversations without directing behaviour.</b>	
a) Clarification Questions [3B45]:	Questions that clarify the child's meaning in the preceding utterance. They are usually yes or no questions (Source: Girolametto et al., 2000, p. 1113). Requests for clarification are also included.	E.g., 1, C: "pak" / T: "he's going to the park?"). E.g., 2, M: "sure?" / "HUH?" ( <i>Examples in Thesis</i> ).
b) WH-Questions[3B46]:	These are questions that includes a WH-word (i.e., what, who, why, where, how). These are considered open-ended questions because the answer is not constrained (Source: Girolametto et al., 2000, p. 1113-1114). If questions are constrained or test knowledge (answers are obvious), utterance is coded as [2B21].	E.g., M: "who likes grapes?" / "what did you have for lunch yesterday?" / "then?" / "some more?" / "what else?"
c) Conversational Yes or No Questions [3B47]	These are yes or no questions that can be answered with a yes or no but do not suggest action or constrain behaviour (Source: Girolametto et al., 2000, p. 1114).	E.g., 1, M: "can I use some of yours?" / "baby Bob is going shopping, isn't she?" E.g., 2, M: "do you think that shoe belongs to the bear?" / "this one like the Mr. Bean teddy bear or not?"

<b>4. LANGUAGE-MODELLING UTTERANCES</b>		
<b>Includes all utterances that is responsive to the child's utterances</b>		
a) Imitation[4B0]	<p>"Direct imitations of the child's verbalization or vocalizations"</p> <p>"Imitations with evaluative tags were considered imitations"</p> <p>(Source: Girolametto et al., 2000, p. 1114).</p> <p>If mother imitates child's response following an earlier question, it is still coded as imitation.</p>	<p>C: "spaghetti" M: "spaghetti"</p> <p>C: "eye" M: "eye, that's right"</p> <p><i>M: "what is this?" C: "bag" M: "bag"</i> (Examples in Thesis)</p>
b) Partial or Reduced Imitation [4B01]	<p>"Repetition with eliminations" (Source: Lasky &amp; Klopp, 1982, p.10) or partial imitations of the child's verbalization or vocalizations.</p> <p>(Source: Examples in Thesis)</p>	<p>C: "it's chocolate" M: "chocolate"</p> <p>C: "a teddy bear so nice" M: "so nice"</p> <p>C: "got corn here" M: "got corn"</p>
c) Expansion or Extension[4B6]	<p>"Mother repeats the immediately preceding child's word approximation or verbalization and completes the utterance by adding one or more morphemes or words." (Source: Girolametto et al., 1999, p. 374).</p> <p>Mother extends child's utterance by adding new information</p>	<p>C: "/ahi/" M: "it says /ahi/"</p> <p>C: "hat" M: "hats."</p> <p>C: "hat" M: "two hats.</p> <p>C: "hat" M: "you have a hat like that, don't you?"</p> <p>C: "car" M: "it's a red car."</p>
d) Descriptions or Self-Talk [4B13]	<p>Mother talks about/describes object(s) in the environment, or object(s) she or child is playing with or looking at, without asking child to respond. "Short utterances that label objects. Most labels were used in short utterances that used the carrier phrases (as in examples) (Source: Girolametto et al., 2000, p. 1114).</p>	<p>M: "this is a colourful table" / "that's a lion."</p> <p>M: "that is X"/ "I have an X" ( 'X' stands for an object label)</p> <p>M: "yuck yuck"</p>
e) Labels[4B131]	<p>Exactly same as Descriptions or Self-Talk but with one exception: mother labels objects following a question to respond. The preceding question is from either mother or child. If labelling takes place without asking child to respond, it is coded as [4B13].</p>	<p>M: "what is this?" M: "it is a bear"</p> <p>C: "what is that?" M: "that is an apple"</p>
f) Connected Commenting or Parallel-Talk[4B28]	<p>Utterances that connects, engages and "describes the child's or her own activity, without asking child to respond or questioning child" (Source: Girolametto et al., 2000, p. 1114).</p>	<p>M: "you built a house" / "I'm making a cookie"</p>

g) Associated Commenting [4B281]	Utterances that describe past or future activities or events (associated) to mothers' or child's ongoing activities without asking child to respond or questioning child ( <i>Source: Thesis Example</i> ). These utterances were also referred to as <i>decontextualized language</i> by Snow (1990).	M: "yesterday we watched this movie" M: "I gave X the ball today to play in the car park" M: "Mummy thought it was a police car"
h) Interpretations[4B29]	"Mother interprets the child's intended message using the context as a cue. The child uses a vocalization that is not recognizable as an approximation of a word. Mother may use a single word or several words to map her subjective interpretation of the child's meaning based on contextual cues." ( <i>Source: Girolametto et al., 1999, p. 374</i> ) Interpretations following child's gestures were not coded.	C: {vocalizes} M: "a hat" C: {vocalizes} M: "a bottle for the baby"
i) Verbal Praise or Acknowledgement[4B30]	"Usually short utterances that acknowledge, evaluate, or praise the child." ( <i>Source: Girolametto et al., 2000, p. 1114</i> ).	M: "good job" / "thank you" / "oh good" / "I'm so glad" / "I know" / "Nice sharing"
<b>5. OTHER UTTERANCES</b>		
j) Responses to Questions [5B481]	<b>Includes all utterances that do not fit into any of above categories</b> Any other utterances that responds to the child's questions or requests (e.g., 'yes', 'I don't know', 'no'). ( <i>Source: Examples in Thesis</i> )	E.g., 1. C: "can we put his in?" M: "yes" E.g., 2. C: "where are all the board sets?" M: "must be in the box" E.g., 3. C: "why?" M: "because you knocked it too hard"
k) Affirmations[5B482]	Utterances that affirm child's preceding statement. This includes use of 'yes', 'UHHUH', 'that's right', 'ok', 'that's fine'. ( <i>Source: Examples in Thesis</i> )	C: "puppet" M: "that's right" C: "I have a cow" M: "yes"
l) Greetings[5B483]	Utterances that reflect daily greeting, e.g., 'good afternoon', 'hello', 'hi there'. These utterances do not serve as a means to obtain the child's attention. ( <i>Source: Examples in Thesis</i> )	C: "fish" M: "hello" M: "good afternoon fish"
m) Ambiguous or Unclear [5B484]	Utterances that are unclear, inaudible, ambiguous, unintelligible, and cannot be coded in any of the above categories. ( <i>Source: Examples in Thesis</i> )	M: "this is not quite often" / "I don't want to {IA}" / "or maybe it can" / "here you go" / another one"

### **3.3 ACCURACY RATING AND RELIABILITY**

#### **3.3.1 Transcription accuracy and reliability**

A student in the final year of her BSc (Hons) Speech and Language Therapy program was engaged to complete transcription accuracy task. The student, born in Singapore, was fluent and familiar with English spoken in Malaysia and Singapore. Having migrated to New Zealand as a young teenager, she was, however, not fluent in Bahasa Malaysia (known as Malay in Singapore). The services of a native Malaysian with English and Malay bilingual competency, and one who was also familiar with language transcriptions using SALT Convention was difficult to acquire in Christchurch. The student (rater 1) has had prior experience completing language transcription tasks using SALT Conventions.

Upon agreement to complete the task, the rater signed a confidentiality agreement to preserve video and data confidentiality. The rater was given a copy of the SALT Conventions Training Manual that highlighted aspects to be transcribed for this particular project. For example, as the study calculated MLU in words instead of MLU in morphemes, the rater was not required to transcribe bound morphemes on the language transcripts. The rater was trained to use the SALT Conventions that were pertinent to the study, as listed in Appendix K. Training consisted of individually discussing each transcription convention on the SALT Training Manual and a practice session. The latter involved the rater viewing one parent-child video and transcribing the language samples independently. Following this, the author reviewed the transcriptions while watching the 15-minute video together with the rater. Agreements and disparities in transcriptions were acknowledged, reviewed and reconciled by jointly viewing the video interactions.

In order to ensure that language transcription accuracy was consistent across the three cultural groups studied, two mother-child video interactions were randomly selected from

each of the three groups. One of these videos (randomly selected from the total of six) was used as a practice session and the remaining five represented 10% of the language samples transcribed. The rater independently transcribed all five language samples and was not privy to the author's transcripts. Likewise, the author had completed the transcriptions prior to the rater undertaking her task.

Independent transcription accuracy was calculated using a simple percent agreement (Heilmann, Miller, Iglesias, Fabiano-Smith, Nockerts & Andriacchi, 2008) for two accuracy units, that is, the number of words per utterance and adherence to transcription conventions for each utterance. These were completed by transferring the rater's and author's language transcripts onto an Excel spreadsheet. Each utterance identified by the author was matched against the utterances identified by the rater. The number of agreements, disagreements and percentage was calculated for the number of words for each utterance and for compliance to the transcription convention. For number of words per utterance, all words that were inconsistent, missed out or marked as unintelligible or inaudible were identified as a 'disagreement'. For transcription convention, agreement was indicated only if, for example, there was no mismatch in use of end of utterance punctuation or use of '< >' to mark overlapping speech, among others. All utterances missed out by the rater were indicated as 'missing'.

The percent agreement for the two determined accuracy units were calculated in total (i.e., for both mother and child utterances) and individually (i.e. for mother utterances only and for child utterances only). The total percent agreement (based on the sum for all five transcripts) is displayed in Table 3.6. Heilmann et al., (2008) indicated that transcription agreement of 85% and above was considered acceptable.

Table 3.6

*Transcription Accuracy Units as a Percentage for Five Language Samples*

<b>Transcription Accuracy Units</b>	<b>Mother Utterances Only</b>	<b>Children Utterances only</b>	<b>Mother &amp; Children Total Utterances</b>
% Words per Utterance Agreement	87.63 (Range:79.6-91.9)	74.23 (Range:70.7-78.0)	83.32 (Range:77.5-87.1)
% Transcription Convention Agreement	94.11	88.78	92.11
<i>Missing utterances</i>	2.52	4.15	3.10

The lower percent agreement of words per utterance could be attributed to the differences in the levels of experience and practice in language transcriptions between the author and rater. This could also be further exacerbated by the fact that the rater was not fluent in Bahasa Malaysia, thus resulting in the increased number of words marked as 'X' for Bahasa Malaysia words.

Given that the transcription accuracy task accounted for and measured all utterances, including abandoned, interrupted, unintelligible and overlap utterances in the language sample, transcription reliability was calculated in an attempt to justify the above results. The values for six verbal productive measures were automatically analysed by the SALT program and these were based on complete, intelligible and verbal utterances only (analysis set). These frequency values were individually extracted from the author's and rater's language transcripts, and transferred onto an SPSS spreadsheet. A bivariate correlation analysis for frequency of the six verbal productive measures was performed using SPSS.

The average inter-transcriber correlations for the five language transcripts were .98 for mothers' number of total utterances (NTU), .99 for children's NTU, .59 for mothers' number of different words (NDW), .99 for children's NDW, .99 for mothers' mean length of utterance in words (MLUw) and .86 for children's MLUw. Inconsistencies in transcription could be attributed to mismatches in overlap, unintelligible, interrupted and abandoned



utterances. In addition, the lower reliability in the number of different words produced by the mother could be due to the Bahasa Malaysia words spoken by mothers in two video interactions. Nevertheless, the overall high reliability values provided confidence in the data results. It must be noted that all Malaysian Chinese and Malaysian Indian mothers in the sample used English when interacting with their children. For the Malaysian Malay sample, four mothers used English, nine mothers spoke exclusively in Bahasa Malaysia, and the remaining four used two languages, English and Bahasa Malaysia, when interacting with their children.

### **3.3.2 Coding accuracy**

A qualified and experienced Speech-Language Therapist (SLT) who was pursuing her PhD program completed the coding accuracy task. The SLT (Rater 2) has experience coding child language samples, and is a native European, fluent in English. The rater was chosen to complete the coding task despite being a non-Bahasa Malaysia speaker as the services of a SLT with fluent Bahasa Malaysia proficiency was difficult to obtain locally. In order to account for the Bahasa Malaysia words present in two language samples, the rater was asked to approach the author for direct oral translation of the words to facilitate the coding task.

Prior to starting the task, the rater underwent a brief training and practice session. The SLT was given a copy of the Definition and Examples of Interaction Behaviours (Table 3.5) used in the study. The author verbally explained each interaction behaviour with the accompanying definitions and examples in a meeting with the rater. All ambiguities were resolved with discussions and corrections (of wordings) were made, where appropriate. The rater was then given one language transcript (devoid of information pertaining to age, ethnicity and name of the participants) to independently practice coding. The rater was required to code only mothers' utterances as only mothers' interaction behaviours were

examined for this study. Upon completion of the task, the rater and author jointly reviewed the coded practice-transcript against the author's coded transcript. Agreements and discrepancies in coding were acknowledged and resolved. Two language transcripts were randomly selected from each of the three cultural groups for the coding accuracy task. One of these transcripts was randomly chosen as the transcript for the practice session and the remaining five constituted 10% of the total sample selected for the accuracy task. The rater independently coded all five transcripts and had no access to the author's coded transcripts.

Accuracy was calculated by counting the total coded utterances, total number of agreements and total number of disagreements for each language transcripts. In addition, the disagreements were further identified as either 'not coded' or 'error in coding'. Overall, a coding agreement of 93.69% was achieved between the author's and the rater's transcripts. Disagreements due to coding error was 3.75% and for non-coded items, 2.75%. Heilmann and his colleagues (2008), following their review of 106 articles (from 2002-2007) that contained coding agreement and protocols, proposed that the acceptable coding accuracy agreement values could range between 93% and 100% agreement.

### **3.4 LANGUAGE SAMPLE ANALYSIS**

Language sample analysis is an established procedure that is used to measure the various components of language (Kemp & Klee, 1997; Klee, 1992b) in an ecologically valid manner (Hewitt, Hammer, Yont & Tomblin, 2005), and is particularly useful with linguistically and culturally diverse populations (Stockman, 1996; Laing & Kamhi, 2003).

#### **3.4.1 Mothers' verbal productivity measures**

Four specific measures, shown to be robust markers of verbal quantity in various parent-child and teacher-child interaction studies, were used to quantify verbal productivity. These served as dependent variables, as listed in Table 3.7.

Table 3.7

*Variables that Measure Verbal Productivity*

<b>Variable/Talk</b>	<b>Measure</b>	<b>Reference</b>
1. Speech rate	Total words per minute (WPM)	Broen (1972); Girolametto et al., (1999).
2. Talkativeness	Total number of utterances (NTU)	Girolametto et al., (1999); Girolametto et al., (2000); Girolametto and Weitzman (2002); Heilmann et al., (2010); Hutchins, Brannick, Bryant and Silliman (2005); Huttenlocher et al., (1991); Tulvsite (2004);
3. Vocabulary diversity	Total number of different words (NDW)	Miller and Klee (1995); Klee (1992a); Girolametto et al., (1999); Girolametto et al., (2000); Girolametto and Weitzman (2002); Pan et al., (2005); Vigil, Hodges, and Klee (2005).
4. Sentence length	Mean Length of Utterance in words (MLUw)	Girolametto et al., (2000); Hoff & Naigles (2002); Parker and Brorson (2005); Tulviste (2004); Vigil, Hodges, and Klee (2005);

The total words per minute (WPM) has been used as an indicator of speech rate by Broen (1972) and Girolametto et al., (1999). The number of total utterance (NTU) is an indicator of talkativeness or amount of talk, as shown by the works of Klee (1992a, 1992b), Tilstra and McMaster (2007), and Heilmann et al., (2010) have made distinctions between these two variables. Vocabulary diversity was measured by using the total number of different words (NDW) as it has shown to be a strong indicator of vocabulary skills in children (e.g., Miller & Klee 1995; Klee 1992a, 1992b). The Mean Length of Utterance in words (MLUw) measures the children's grammatical development right up to 59 months of age and is not influenced by children's talk quantity (Huttenlocher, et al 2002). Given that it was not the aim of the study to quantify the morphological features of the sentence, the Mean Length of Utterance in words (MLUw) was chosen as an indicator of sentence length instead of the use of Mean Length of Utterance in morphemes (MLUm). In addition, the use of

MLUm has been shown to be a valid marker of sentence length with non-English speaking participants, and has been used across languages and dialects (Majorano & Lavelli, 2014; Parker & Brorson, 2005; Tulviste, 2004). Furthermore, Parker and Brorson's (2005) study with typically-developing children, and Hutchins et al., (2005), have shown that MLUw can measure children's language skills as reliably as MLUm. The measures for mothers' and children's verbal productivity were identical and calculated using SALT.

### **3.4.2 Mothers' interaction behaviour measures**

The measures used to quantify interaction behaviours were classified into five categories, as illustrated in Figure 3.1. These behaviours serve as dependent variables in the study. With the exception of two variables, SALT calculated all coded measures in terms of number of frequency occurrence. Turn-taking was measured by calculating mothers' mean turn length, that is, by dividing the total number of utterances with the number of speaker turns in utterances for each speaker, that is, mother and child. Conversational dominance was measured by using the formula below (Lefkowitz et al., 1996):

$$\frac{\text{Total Number of Words Spoken by Mother}}{\text{Total Number of Words Spoken by Child}} = \text{Conversational Dominance Ratio}$$

The maternal interaction behaviours were coded and calculated within the SALT software.

### **3.4.3 Statistical analysis**

Descriptive statistics and one-way between subjects ANOVA were computed to quantitatively describe the verbal and interaction behaviours used by the three groups of Malaysian mothers; and to detect group differences. The means (*M*) and standard deviations (*SD*) for each group, *F* values (*F*), degrees of freedom (*df*), and significance levels (*p*) were reported. A post-hoc test was carried out to identify the groups that were significantly different from each other. In order to measure the relationships between the determined

measures, a correlation analysis (two-tailed test) was calculated to measure the strength of relationship between the indicated variables. The means ( $M$ ), standard deviations ( $SD$ ), correlation values ( $r$ ) and significant levels ( $p$ ) were reported.

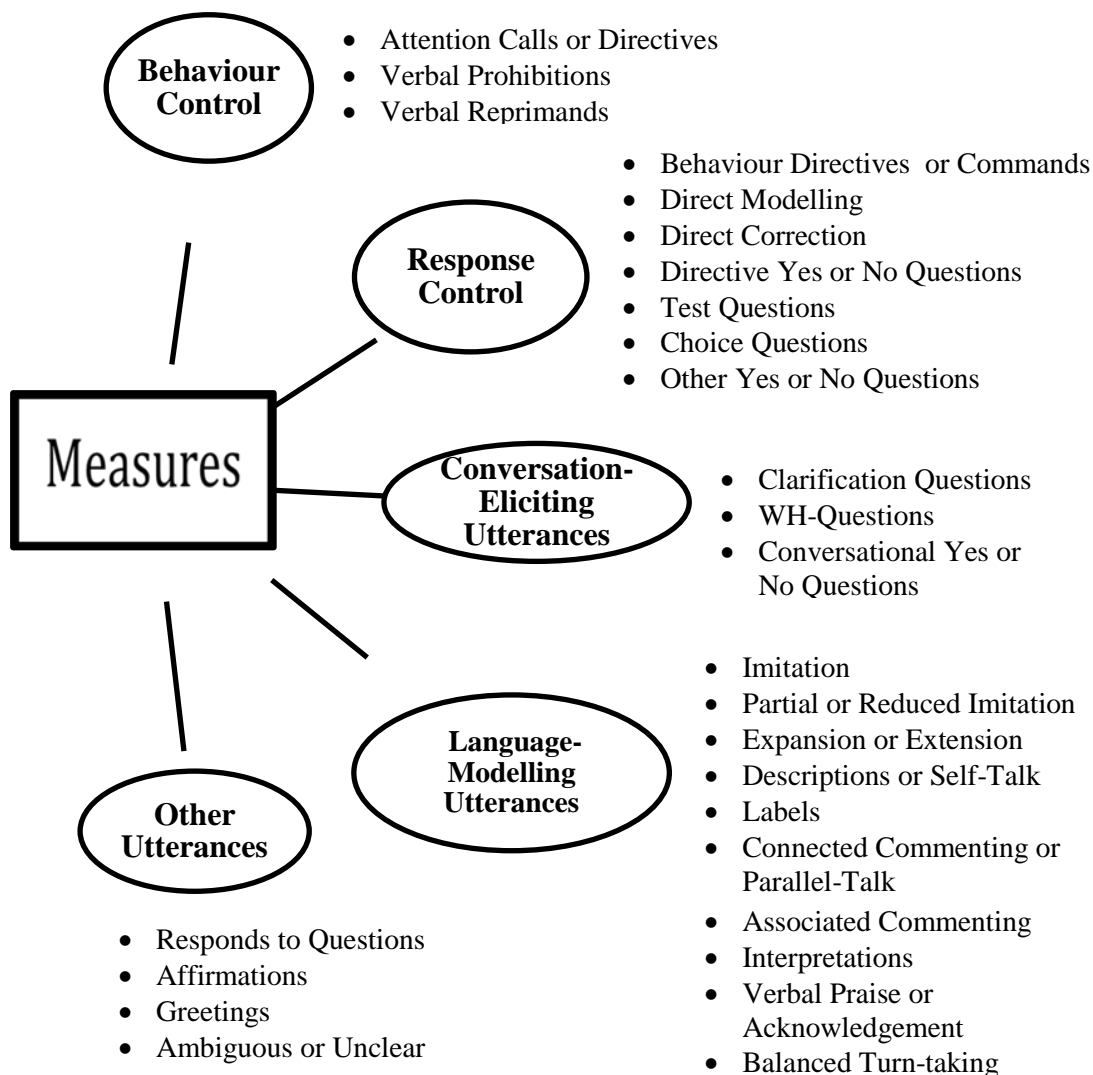


Figure 3.1 *Variables that Measure Mothers' Interaction Behaviours*

### 3.5 RESULTS

Two specific research questions were asked 1) what verbal and interaction behaviours do Malaysian mothers use when interacting with their young children and do these differ across ethnic groups? and 2) what is the relationship between: a) measures of mothers' and

children's verbal productivity, and b) measures of mothers' interaction behaviours and children's verbal productivity? The results are organized into five sections that analysed: 1) mothers' verbal productivity measures, 2) mothers' verbal interaction behaviours, 3) children's verbal productivity measures, 4) correlations between measures of mothers' and children's verbal productivity, and 5) correlations between measures of mothers' interaction behaviours and children's verbal productivity. While the first two sections answer the first research question, the last three sections provide answers for the second research question.

### **3.5.1 Analysis of measures of verbal productivity in Malaysian mothers**

Four verbal productivity measures were analysed: words per minute (speech rate), number of total utterance (talkativeness), number of different words (vocabulary diversity) and mean length of utterance in words (MLUw) (sentence length). The descriptive analysis for the entire group of Malaysian mothers follows is provided below.

Mothers' total mean for speech rate was 56.95 words per minute ( $SD = 12.42$ , range = 33.47 – 91.53). In terms of talkativeness, the mothers used a total mean of 329.69 utterances ( $SD = 70.03$ , range = 221-626) with their children during the 15-minute sampled interaction. As a measure of vocabulary diversity, the mean total number of different words used by Malaysian mothers was 203.29 ( $SD = 42.98$ ), range = 123 – 353). The total mean length of utterance in words (MLUw) used was 2.72 ( $SD = .51$ , range = 1.85– 3.90). Table 3.8 displays the means and standard deviations for these variables in each group.

Table 3.8

*Means and Standard Deviations for Mothers' Verbal Productivity Measures across Groups*

Variables	Mothers								
	Malaysian Malay ( <i>n</i> = 17)			Malaysian Chinese ( <i>n</i> = 16)			Malaysian Indian ( <i>n</i> = 15)		
	<i>M</i>	( <i>SD</i> )	Min-Max	<i>M</i>	( <i>SD</i> )	Min-Max	<i>M</i>	( <i>SD</i> )	Min-Max
<b>Speech rate</b>									
Total number of words per minute (WPM)	50.52	(9.46)	33.47-66.73	60.04	(12.19)	40.60-80.13	60.94	(13.36)	33.47-91.53
<b>Talkativeness</b>									
Total number of utterances (NTU)	334.12	(47.90)	247-409	301.81	(63.32)	221-482	354.40	(89.32)	241-626
<b>Vocabulary diversity</b>									
Total number of different words (NDW)	186.12	(38.99)	123-254	222.00	(50.22)	163-353	202.80	(31.66)	141-244
<b>Sentence length</b>									
Mean length of utterance in words (MLUw)	2.37	(.48)	1.85-3.74	3.11	(.39)	2.48-3.90	2.7	(.38)	2.20-3.32

In order to compare group differences, a univariate analysis on the four measures of verbal productivity was conducted. A post hoc analysis using Tukey criterion for significance was used to identify the groups that differed from each other. Tukey's method was selected instead of Scheffe's criterion, as the group sizes in the sample were comparable. In addition, Field (2013) recommended the use of Tukey as it generates good power and minimizes Type 1 error. Levene's test was computed on all four measures to test homogeneity of variance. The results, as displayed in Table 3.9, indicate the group values were not statistically different. Alpha level was set at 0.05 with 95% confidence interval for all measures. The F values, degrees of freedom, p values and effect size (eta square) for each of the four measures, following a one-way analysis of variance are reported below.

Table 3.9

*Test of Homogeneity of Variances for Mothers' Verbal Productivity Measures*

Verbal Productivity Measures	Levene Statistic	df1	df2	Sig.
Speech rate (WPM)	.729	2	45	.488
Talkativeness (NTU)	.496	2	45	.612
Vocabulary diversity (NDW)	1.387	2	45	.260
Sentence length (MLUw)	.232	2	45	.794

**Speech rate.** Overall, Malaysian mothers used a total mean of 56.9 words per minute ( $SD = 12.42$ ) with their children. A statistically significant between-group difference was noted at  $F(2, 45) = 3.998, p = .025$ . Malaysian Indian mothers were found to use more words per minute with their children in comparison to Malaysian Malay mothers,  $p = .04$ , yielding a large effect size of  $\eta^2 = .151$ . Although group mean differences between Malaysian Chinese and Malaysian Malay mothers were observed, these were not statistically significant ( $p = .06$ ). Mothers of Chinese and Indian ethnicities used similar speech rate with their respective children. Figure 3.2 displays the mean average for mothers' speech rate by ethnicity using a boxplot graph.



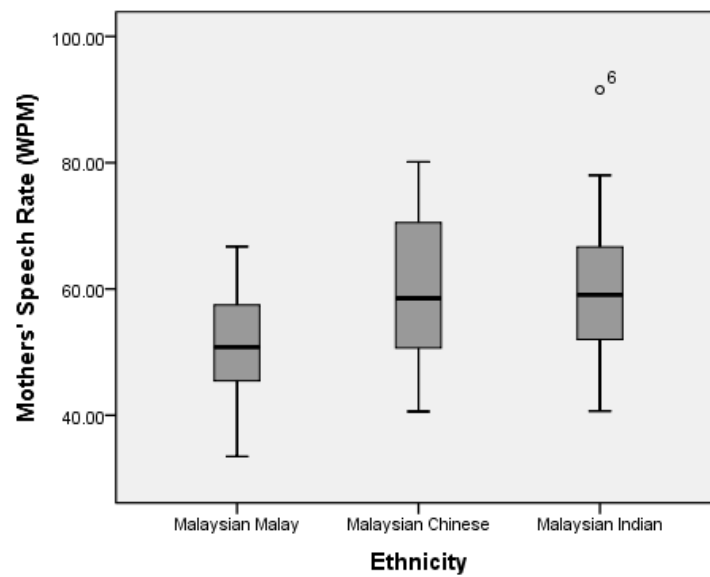


Figure 3.2 *Mean Values for Speech Rate by Mothers across Groups.*

**Talkativeness.** The total number of utterances used by Malaysian mothers within the 15-minute sample was  $M = 329.69$  ( $SD = 70.03$ ). Mothers across the groups engaged in similar degrees of talkativeness with their young children. The values of  $F(2, 45) = 2.366$ ,  $p = .105$  reveal no statistically significant group difference. Figure 3.3 shows a boxplot graph of mothers' talkativeness by ethnicity.

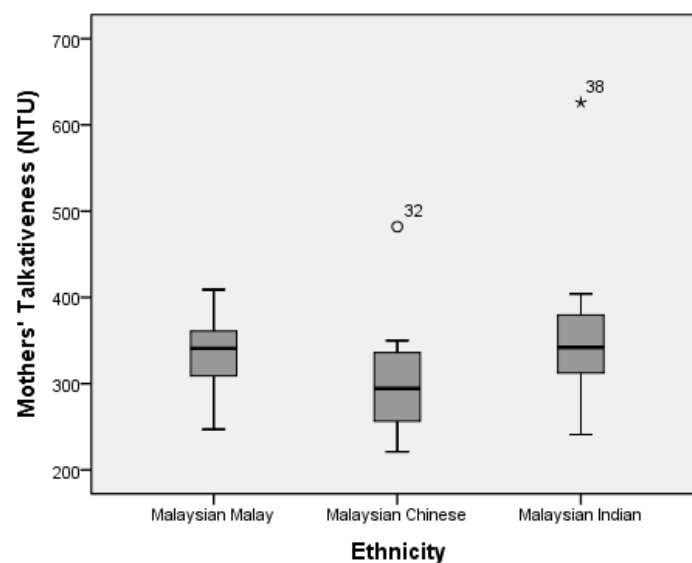


Figure 3.3 *Mean Values for Talkativeness for Mothers across Groups.*

**Vocabulary diversity.** Mothers in the sampled population used an average mean of 203.29 ( $SD = 42.98$ ) total number of different words with their young children. Although between-groups mean differences were noted, these were not statistically significant,  $F(2, 45) = 3.136, p = .053$ . Figure 3.4 shows a boxplot graph of mothers' vocabulary diversity by ethnicity.

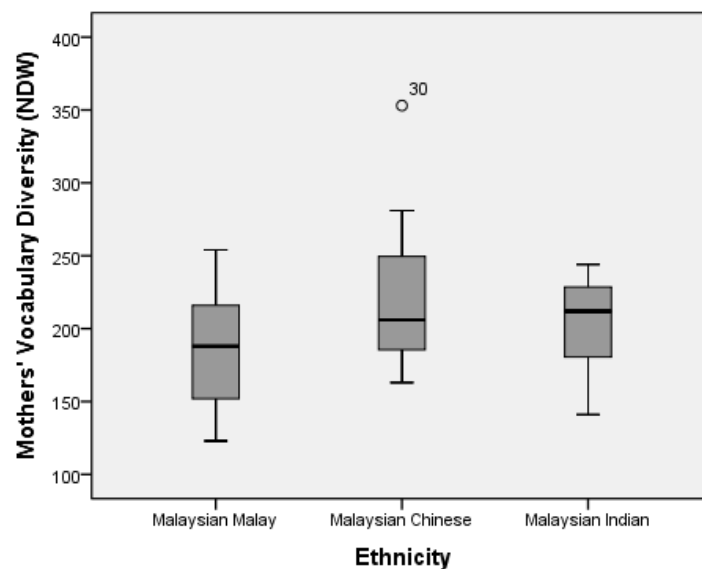


Figure 3.4 Mean Values for Vocabulary Diversity for Mothers across Groups.

**Sentence Length.** Overall, Malaysian mothers' mean length of utterance in words (MLUw) was 2.72 ( $SD = .52$ ). Groups were statistically different  $F(2, 45) = 12.423, p < .001$ . Malaysian Chinese mothers used significantly higher MLUw in comparison to both Malaysian Malay ( $p < .001$ ) and Malaysian Indian ( $p < .001$ ) mothers. This difference yielded a large effect size of  $\eta^2 = .356$ , that is, 35% of the difference in MLUw variance can be accounted for by ethnicity. There were no statistically significant differences in use of sentence length by Malaysian mothers of Malay and Indian ethnicities. Figure 3.5 shows a boxplot graph of mothers' MLUw by ethnicity.

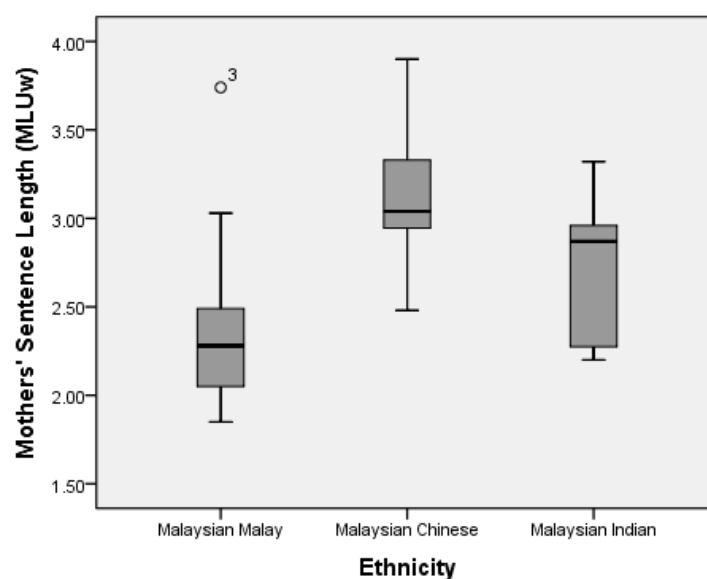


Figure 3.5 *Mean values for sentence length for Malaysian mothers across groups.*

### 3.5.2 Analysis of mothers' verbal interaction behaviours

In addition to verbal productivity, mothers' interaction behaviours were analysed in order to ascertain the type of interaction behaviours used and to detect differences between the three groups of Malaysian mothers. The variables that quantified maternal interaction behaviours were classified into five categories, that is, behaviour control, response control, conversation-eliciting, language-modelling and other utterances. In addition, mothers' conversational dominance ratio and mean turn length (in utterances) were also measured. The means and standard deviations for the variables are displayed in Table 3.10 and Table 3.11 as derived from a one-way ANOVA analysis. Similarly, a Tukey's post hoc test was applied to identify the group that differed.

Table 3.10

*Means and Standard Deviation for Mothers' Interaction Behaviours across Group*

Variables	Malaysian Malay ( <i>n</i> = 17)			Malaysian Chinese ( <i>n</i> = 16)			Malaysian Indian ( <i>n</i> = 15)		
	<i>M</i>	( <i>SD</i> )	Min-Max	<i>M</i>	( <i>SD</i> )	Min-Max	<i>M</i>	( <i>SD</i> )	Min-Max
<b>Behaviour Control Total</b>	<b>26.53</b>	<b>(11.53)</b>	<b>7-48</b>	<b>22.00</b>	<b>(14.12)</b>	<b>6-59</b>	<b>33.33</b>	<b>(21.16)</b>	<b>7-99</b>
Attention calls or directives	15.18	(9.11)	3-36	13.19	(11.30)	3-48	19.13	(14.85)	2-58
Verbal prohibitions	6.12	(5.79)	0-22	5.50	(4.40)	2-20	10.47	(6.60)	0-26
Verbal reprimands	5.24	(5.19)	0-19	3.31	(3.72)	0-15	3.73	(4.70)	0-15
<b>Response Control Total</b>	<b>113.88</b>	<b>(29.70)</b>	<b>58-188</b>	<b>88.94</b>	<b>(22.50)</b>	<b>60-134</b>	<b>114.87</b>	<b>(54.23)</b>	<b>53-285</b>
Commands or Behaviour directives	35.47	(16.63)	15-66	30.19	(14.14)	13-56	56.73	(30.52)	8-118
Direct modelling	3.94	(5.46)	0-20	1.81	(2.19)	0-7	.87	(1.88)	0-4
Direct correction	3.71	(2.66)	0-10	4.63	(3.30)	0-14	4.13	(4.31)	0-18
Directive Yes or No questions	7.88	(5.69)	0-22	10.94	(5.76)	5-23	8.60	(4.82)	3-21
Test questions	44.35	(26.84)	14-124	24.38	(17.99)	1-80	30.53	(32.09)	3-131
Choice questions	1.24	(1.52)	0-5	1.38	(.96)	0-3	1.40	(1.68)	0-6
Imitative questions	5.24	(3.40)	1-11	4.19	(2.93)	0-8	2.80	(2.51)	0-10
Other Yes or No questions	12.06	(7.64)	4-27	11.44	(7.57)	0-26	9.80	(2.51)	0-11
<b>Conversation-Eliciting Utterance Total</b>	<b>48.24</b>	<b>(16.03)</b>	<b>24-78</b>	<b>43.81</b>	<b>(13.43)</b>	<b>23-70</b>	<b>39.87</b>	<b>(17.64)</b>	<b>7-99</b>
Clarification questions	9.94	(6.43)	4-30	10.44	(5.29)	0-19	10.60	(5.49)	2-19
WH-questions	29.47	(12.20)	8-52	26.06	(9.21)	11-43	21.40	(12.32)	10-51
Conversational Yes or No questions	8.82	(5.31)	2-22	7.31	(5.36)	1-18	7.87	(5.64)	1-21
<b>Language-Modelling Utterances Total</b>	<b>73.76</b>	<b>(22.33)</b>	<b>45-144</b>	<b>76.31</b>	<b>(21.18)</b>	<b>45-129</b>	<b>79.40</b>	<b>(22.86)</b>	<b>49-120</b>
Imitation	12.29	(7.40)	2-30	12.63	(13.16)	0-55	10.73	(6.52)	1-22
Partial or reduced imitation	2.76	(2.28)	0-6	3.44	(2.78)	0-9	2.60	(1.84)	0-6
Labels	15.00	(9.08)	2-31	5.13	(4.10)	0-15	8.13	(8.22)	0-27
Expansion or Extension	5.12	(9.08)	2-31	4.19	(2.20)	1-9	3.47	(2.62)	0-8
Descriptions or Self-talk	24.41	(2.80)	2-10	32.44	(14.02)	19-68	34.60	(15.01)	15-70
Connected commenting or Parallel-talk	6.59	(14.66)	8-73	12.63	(6.01)	3-27	11.60	(6.06)	4-25
Associated Commenting	1.88	(5.90)	0-19	1.50	(1.79)	0-5	3.20	(4.25)	0-15

Interpretations	.76	(2.60)	0-9	.69	(.70)	0-2	.60	(1.06)	0-3
Verbal praise or Acknowledgement	4.94	(3.58)	0-12	3.69	(2.70)	1-9	4.47	(4.47)	0-17
<b>Other Utterances Total</b>	<b>42.59</b>	<b>(12.06)</b>	<b>20-58</b>	<b>43.88</b>	<b>(21.57)</b>	<b>22-115</b>	<b>59.47</b>	<b>(19.74)</b>	<b>35-97</b>
Responses to questions	4.06	(3.38)	0-12	3.62	(3.5)	0-11	3.40	(2.38)	0-7
Affirmations	20.47	(10.68)	6-48	15.12	(9.76)	5-39	28.07	(16.70)	7-67
Greetings	1.00	(1.77)	0-6	3.38	(3.38)	0-10	2.27	(2.37)	0-9
Ambiguous or Unclear	17.06	(8.95)	3-38	21.75	(21.75)	3-71	25.73	(10.50)	10-49
<b>Total Grand Mean</b>	<b>305</b>			<b>274.94</b>			<b>326.94</b>		

Table 3.11

*Means and Standard Deviation for Mothers' Conversational Dominance and Mean Turn Length across Group*

Variables	Malaysian Malay ( <i>n</i> = 17)			Malaysian Chinese ( <i>n</i> = 16)			Malaysian Indian ( <i>n</i> = 15)		
	<i>M</i>	( <i>SD</i> )	Min-Max	<i>M</i>	( <i>SD</i> )	Min-Max	<i>M</i>	( <i>SD</i> )	Min-Max
Conversational Dominance	2.47	(1.08)	1.37-5.77	3.63	(2.22)	1.57-10.13	3.09	(1.93)	1.28-7.01
Mean Turn Length (utterances)	2.30	(.54)	1.52-3.68	2.71	(1.03)	1.74-5.98	2.64	(.90)	1.48-4.45

In order to examine homoscedasticity, Levene's test was conducted to ensure the use of one-way ANOVA met the assumption of equal population variance. With the exception of three variables, all other twenty-nine variables met this assumption, as displayed in Table 3.12. Field (2013) recommended Games-Howell post-hoc test when equal variances were not assumed. Alpha level was set at 0.05 with 95% confidence interval for all measures. The  $F$  values, degrees of freedom,  $p$  values and effect size (eta square) for each of the four measures are reported. In addition, the equivalent values using non-parametric test are presented for three variables that violated parametric test assumptions. Given one-way ANOVA is a robust test, both tests were expected to capture statistical significance, if present.

Table 3.12

*Test of Homogeneity of Variances for Mothers' Interaction Behaviour Measures*

<b>Variables</b>	<b>Levene Statistics</b>	<b>df1</b>	<b>df2</b>	<b>Sig</b>
Attention calls or directives	1.417	2	45	.253
Verbal prohibitions	1.335	2	45	.273
Verbal reprimands	.904	2	45	.412
Commands or Behaviour directives	3.104	2	45	.055
Direct modelling	8.295	2	45	.001*
Direct correction	.147	2	45	.864
Directive Yes or No questions	.653	2	45	.525
Test questions	.987	2	45	.380
Choice questions	1.351	2	45	.269
Imitative questions	2.648	2	45	.082
Other Yes or No questions	1.472	2	45	.240
Clarification questions	.014	2	45	.986
WH-questions	.509	2	45	.605
Conversational Yes or No questions	.154	2	45	.857
Imitation	.838	2	45	.440
Partial or reduced imitation	1.643	2	45	.205
Labels	3.86	2	45	.028*
Expansion or Extension	1.361	2	45	.267
Descriptions or Self-talk	.383	2	45	.684
Connected commenting or Parallel-talk	.017	2	45	.983
Associated Commenting	2.213	2	45	.121
Interpretations	.809	2	45	.452
Verbal praise or Acknowledgement	1.201	2	45	.310
Responses to questions	.842	2	45	.437
Affirmations	2.639	2	45	.082
Greetings	3.569	2	45	.036*
Ambiguous or Unclear	1.267	2	45	.292
Conversational Dominance	2.651	2	45	.082
Mean Turn Length (utterances)	1.422	2	45	.252

\* $p < 0.05$  indicates violation of assumption of equal population variance for ANOVA.

**Behaviour control.** Overall, Malaysian mothers used more attention calls or directives ( $M = 15.75$ ,  $SD = 11.86$ ) in comparison to verbal prohibitions ( $M = 7.27$ ,  $SD = 5.95$ ) and verbal reprimands ( $M = 4.13$ ,  $SD = 4.57$ ) with their children. A statistically significant group difference was noted for verbal prohibitions only, ( $F(2, 45) = 3.542$ ,  $p = .037$ ). Malaysian Indian mothers were noted to use more verbal prohibitions with their young children in comparison to Malaysian Chinese mothers ( $p = .047$ ,  $\eta^2 = .136$ ). There were no statistically significant differences in the use of verbal reprimands and, attention calls or directives between the groups. Figure 3.6 shows the frequency (number of occurrence) for mothers' use of behaviour control utterances by ethnicity using a boxplot graph.

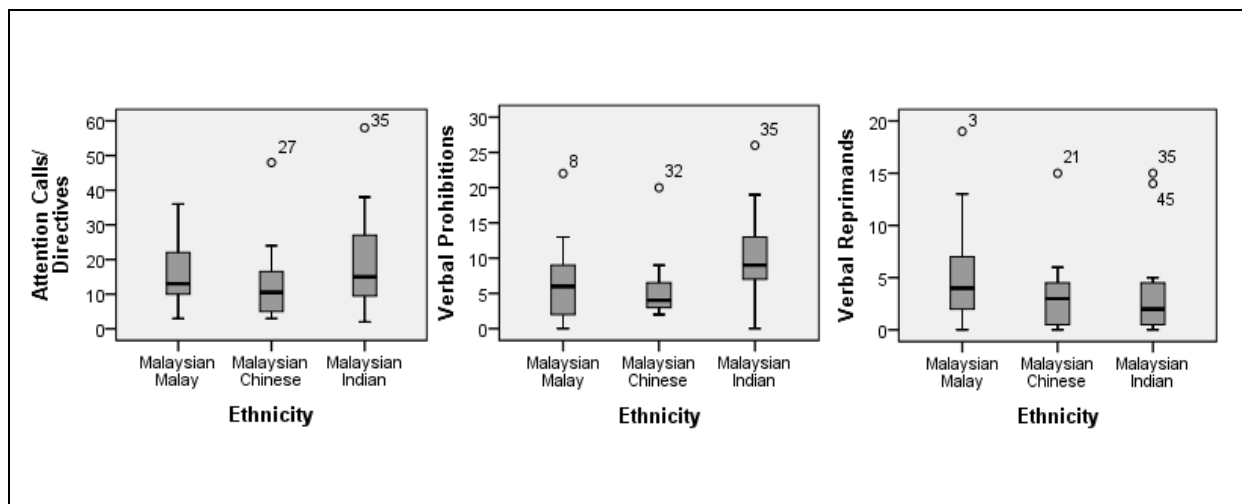


Figure 3.6 *Frequency for Behaviour Control Utterances across Groups*

**Response control.** Malaysian mothers in the sampled population used more commands or behaviour directives ( $M = 40.35$ ,  $SD = 23.76$ ) and test questions ( $M = 33.37$ ,  $SD = 26.99$ ) with their children. This is in comparison to the use of other Yes or No questions ( $M = 11.15$ ,  $SD = 6.89$ ), directive Yes or No questions ( $M = 9.13$ ,  $SD = 5.50$ ), direct corrections ( $M = 4.15$ ,  $SD = 3.40$ ), imitative questions ( $M = 4.13$ ,  $SD = 3.09$ ), direct modelling ( $M = 2.27$ ,  $SD = 3.72$ ) and choice questions ( $M = 1.33$ ,  $SD = 1.39$ ). With the exception of commands or behaviour directives ( $F(2, 45) = 6.690$ ,  $p = .003$ ), there were no statistically significant group

difference in the other seven interaction behaviours listed as response control. Malaysian Indian mothers were using statistically significantly more commands or behaviour directives with their young children when compared to both Malaysian Chinese ( $p = .003$ ) and Malaysian Malay ( $p = .019$ ) mothers. The between-group difference generated a large effect size of  $\eta^2 = .229$ . No statistically significant difference was noted for use of commands or behaviour directives between Malaysian Chinese and Malaysian Malay groups. Although the mean difference between groups for three verbal interaction behaviours were noted to be distinct, a one-way ANOVA for direct modelling ( $p = 0.51$ ), imitative questions ( $p = .082$ ) and test questions ( $p = 0.91$ ) showed no statistically significant difference. Figure 3.7 displays the frequency for mothers' use of response control utterances by ethnicity using boxplot graphs.



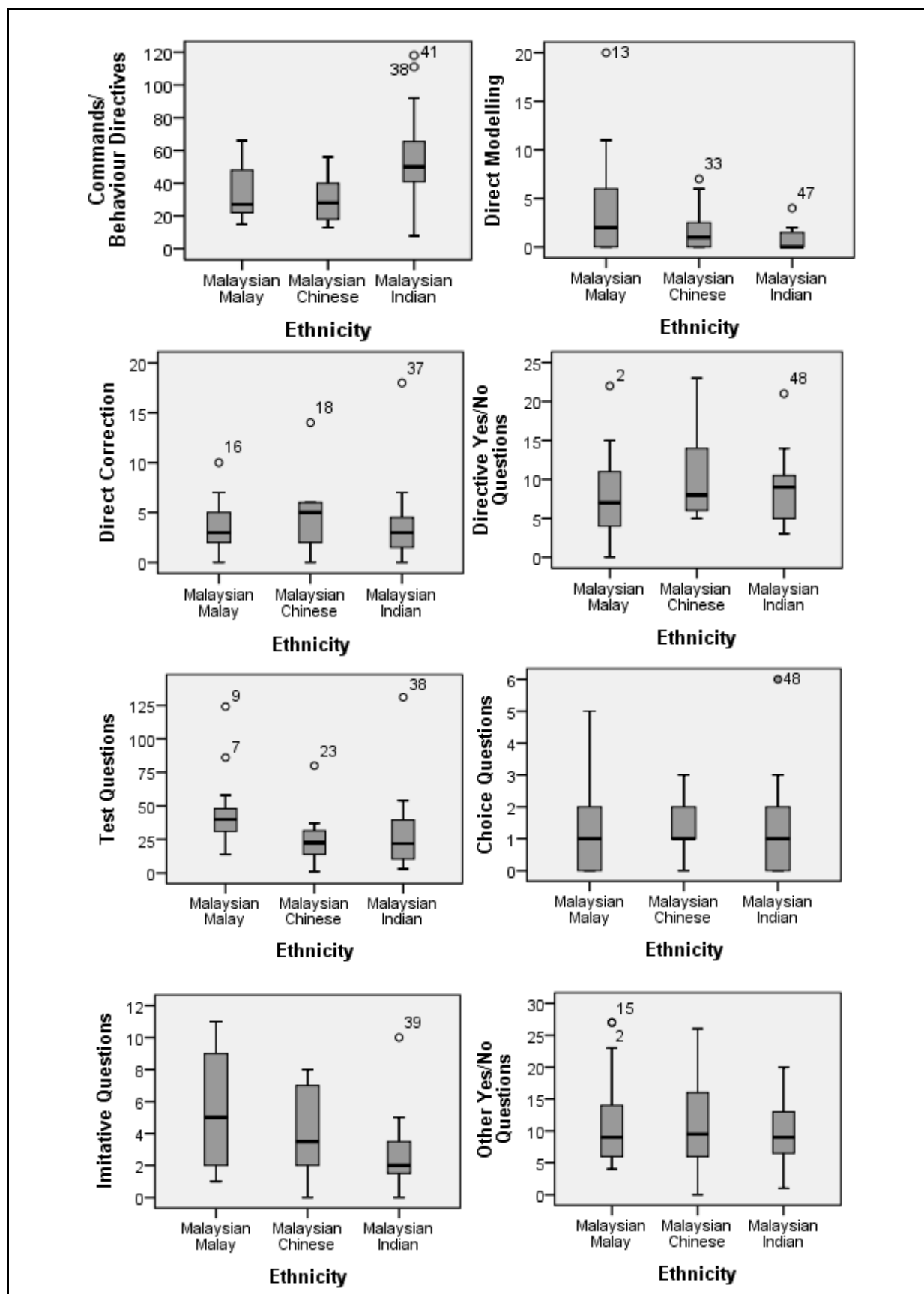


Figure 3.7 Frequency for Response Control Utterances across Groups

**Conversation-Eliciting Utterances.** Overall, the total frequency mean for WH-Questions ( $M = 25.81$ ,  $SD = 11.57$ ) was higher than for use of clarification questions ( $M = 10.31$ ,  $SD = 5.64$ ) and conversational yes or no questions ( $M = 8.02$ ,  $SD = 5.35$ ). No statistically significant group differences were noted,  $F(2, 45) = .058$ ,  $p = .944$ . Figure 3.8 shows the frequency for mothers' use of conversational-eliciting utterances by ethnicity using a boxplot graph.

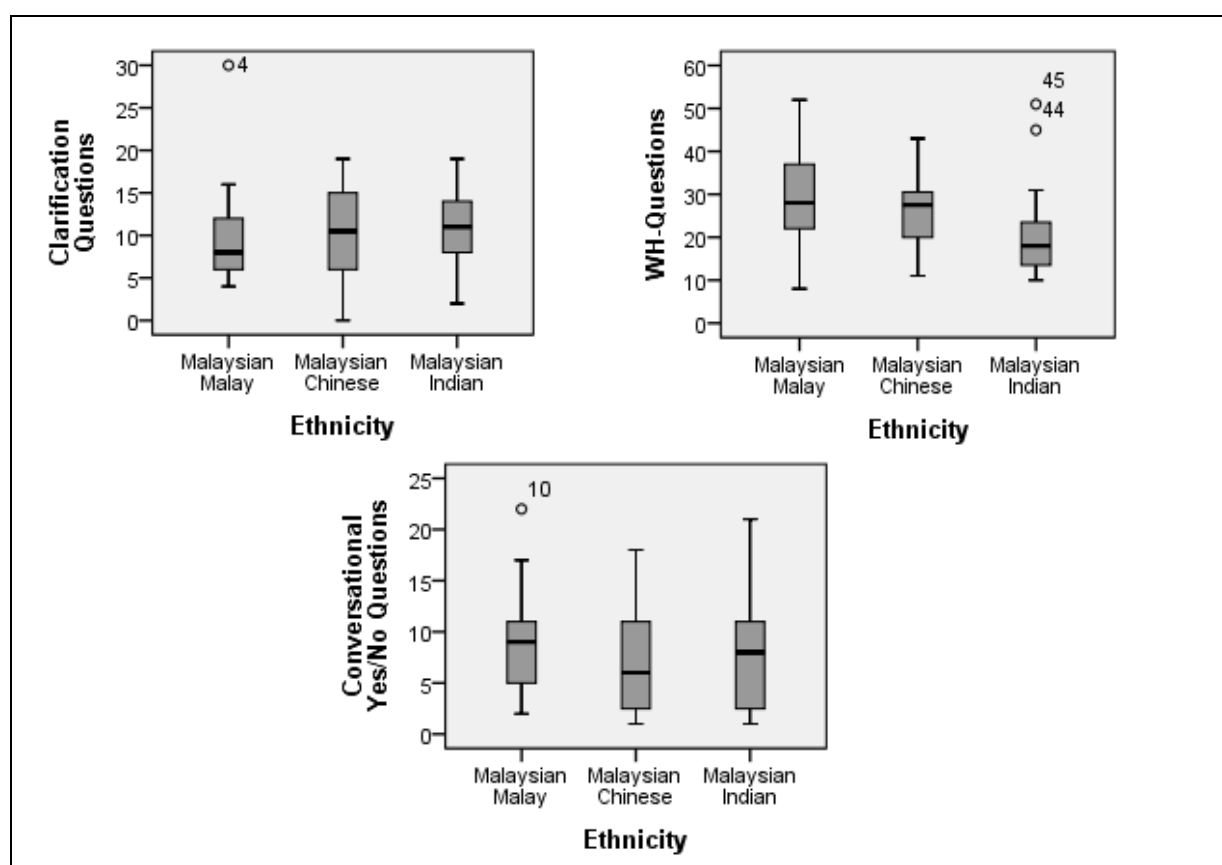


Figure 3.8 *Frequency for Conversation-Eliciting Utterances across Group*

**Language-Modelling Utterances.** In general, Malaysian mothers used more descriptions or self-talk ( $M = 30.27$ ,  $SD = 14.93$ ) with their children, when compared to the use of imitation ( $M = 11.92$ ,  $SD = 9.34$ ), connected commenting or parallel-talk ( $M = 10.17$ ,  $SD = 6.45$ ), labels ( $M = 9.56$ ,  $SD = 8.46$ ), verbal praise or acknowledgement ( $M = 4.37$ ,  $SD = 3.59$ ), expansion or extension ( $M = 4.29$ ,  $SD = 2.59$ ), partial or reduced imitation ( $M = 2.94$ ,

$SD = 2.32$ ), associated commenting ( $M = 2.17$ ,  $SD = 3.03$ ) and interpretations ( $M = .69$ ,  $SD = 1.03$ ) interaction behaviours.

A statistically significant group difference was found for two variables: use of labels  $F(2, 45) = 7.582$ ,  $p = .001$  and use of connected commenting or parallel-talk,  $F(2, 45) = 4.820$ ,  $p = .013$ . Malaysian Malay mothers were found to use statistically more labels with their young children in comparison to both Malaysian Chinese mothers ( $p = .001$ ) and Malaysian Indian mothers ( $p = .034$ ). This statistical difference represented a large effect size ( $\eta^2 = .252$ ). There were no statistically significant differences between mothers of Chinese and Indian origins. Given the Levene's test detected heteroscedasticity for the variable 'labels', a Games-Howell post-hoc test was conducted to confirm the robustness in using one-way ANOVA with Tukey's post-hoc test. The results for the former yielded a statistically significant difference at  $p = 0.01$  as well.

In addition, Malaysian Chinese mothers were also found to use more connected commenting or parallel-talk with their young children in comparison to Malaysian Malay mothers, a difference that was statistically different at  $p = .016$ ,  $\eta^2 = .176$ . Although the mean for use of connected commenting or parallel-talk in the Malaysian Indian group was higher than the Malaysian Malay group, no statistical difference was detected ( $p = .057$ ). Malaysian mothers of Chinese and Indian ethnicities were comparable in the use of connected commenting or parallel-talk. Malaysian mothers across the groups were comparable for the other seven interaction behaviours. Figure 3.9 displays the frequency for mothers' use of language-modelling utterances by ethnicity using a boxplot graph.

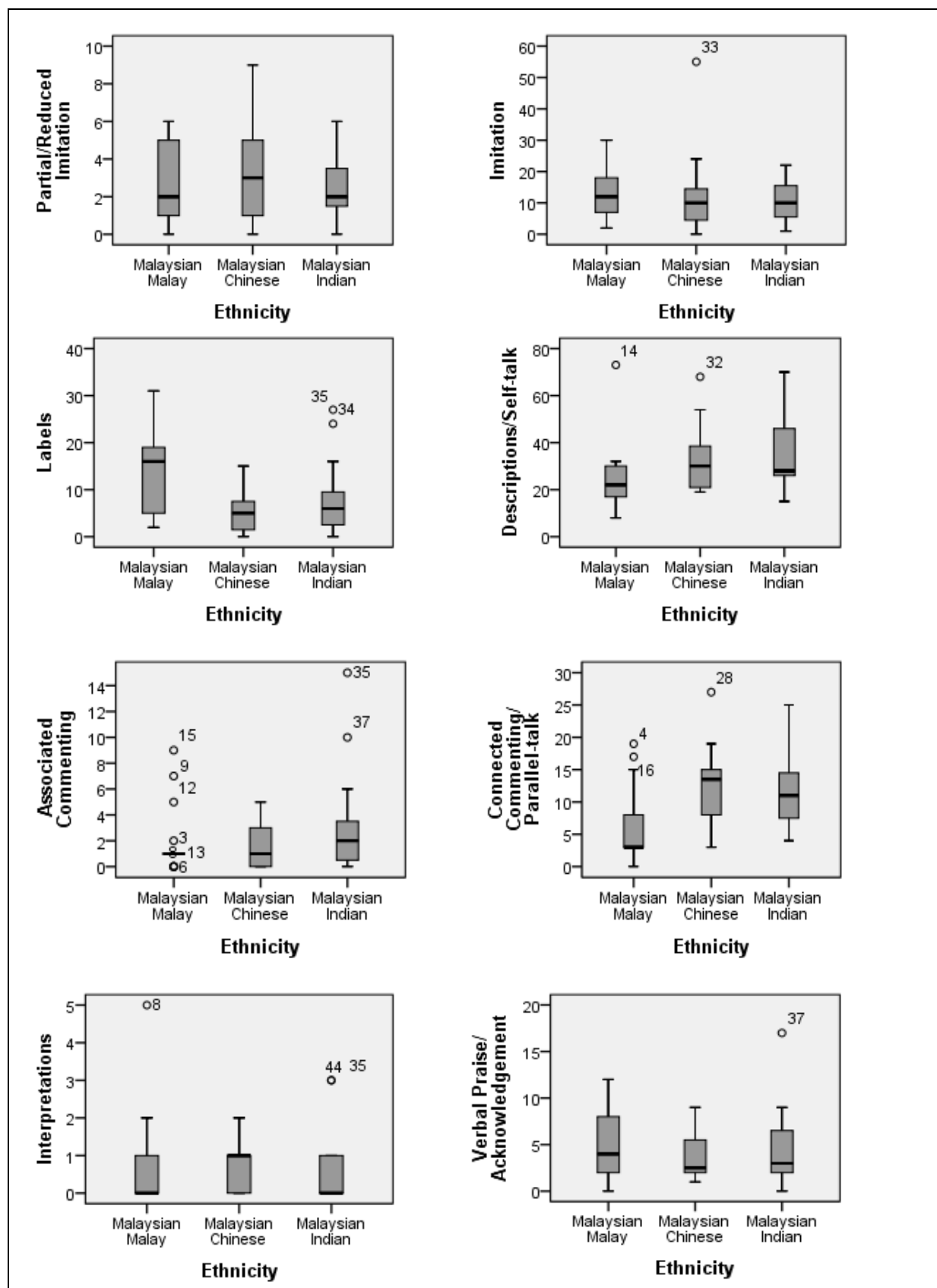


Figure 3.9 Frequency for Language-Modelling Utterances across Group

**Other Utterances.** Overall, Malaysian mothers used the following ‘other’ utterances with their young children: greetings ( $M = 2.19$ ,  $SD = 2.72$ ), responses to questions ( $M = 3.71$ ,  $SD = 3.09$ ), affirmations ( $M = 21.06$ ,  $SD = 13.42$ ) and ambiguous/unclear utterances ( $M = 21.33$ ,  $SD = 12.63$ ). A statistically significant between-group difference was noted for use of greetings ( $F(2, 45) = 3.489$ ,  $p = .039$ ) and affirmations ( $F(2, 45) = 4.105$ ,  $p = .023$ ). Malaysian Chinese mothers used more greeting utterances with their young children in comparison to Malaysian Malay mothers, a difference that was statistically significant at  $p = .030$  with a medium effect size of  $\eta^2 = .134$ . Given that the Levene’s test for this variable was significant, an equivalent non-parametric test, Kruskal-Wallis was conducted. A statistically significant group difference at  $p = .033$  was obtained. However, a post-hoc test using the Games-Howell method revealed that the difference between Malaysian Chinese and Malaysian Malay mothers were not statistically significant from one another ( $p = .051$ ). There were no difference between Malaysian mothers of Chinese and Indian ethnicities and mothers of Malay and Indian ethnicities. Malaysian Indian mothers were found to use more affirmations with their young children in comparison to Malaysian Chinese mothers. This difference was statistically significant at  $p = .017$  with a large effect size of  $\eta^2 = .154$ . There were no other group differences for affirmations. The use of responses to questions ( $p = .834$ ) and ambiguous/unclear utterances ( $p = .151$ ) across all groups of Malaysian mothers were not statistically different. Figure 3.10 illustrates the frequency for mothers’ use of language-modelling utterances by ethnicity using a boxplot graph.

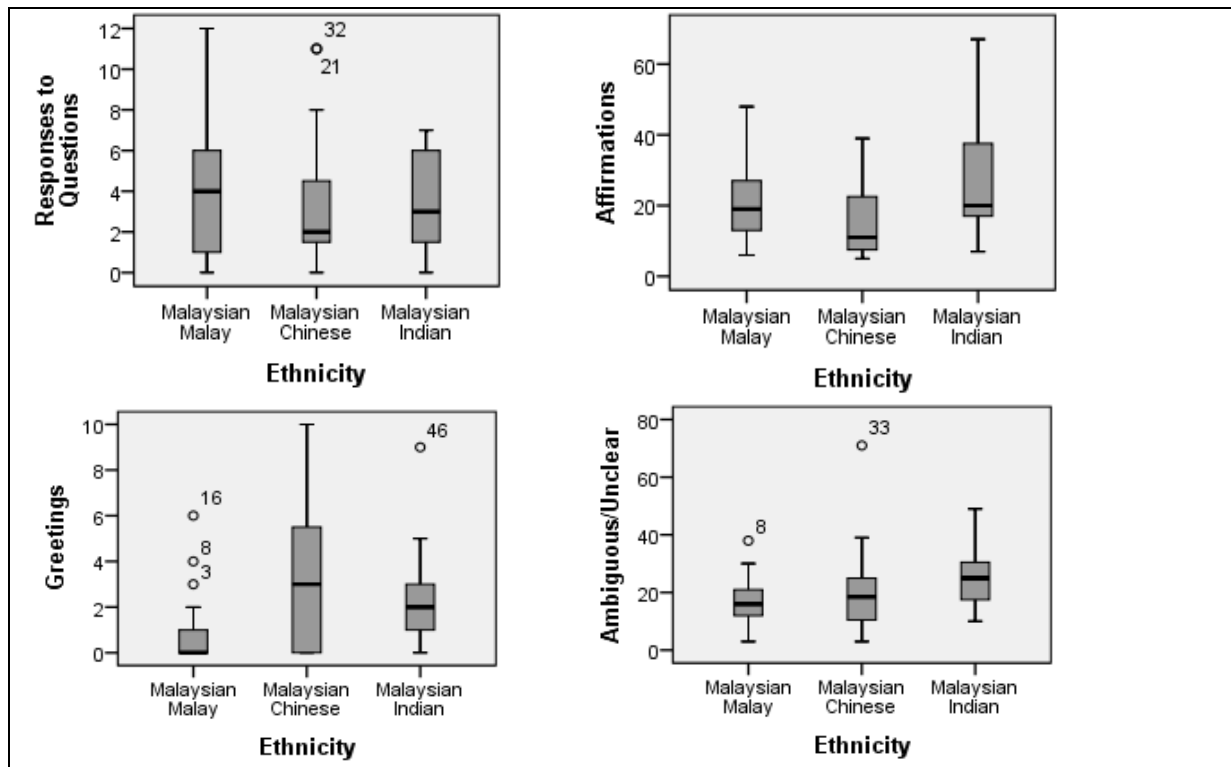


Figure 3.10 Frequency for Other Utterances across Group

**Conversational dominance.** The total mean conversational dominance ratio for all mothers in the sampled population was  $M = 3.05$  ( $SD = 1.82$ ). Group means indicated Malaysian Chinese mothers dominated the conversations with their children more ( $M = 3.63$ ,  $SD = 2.22$ ) more than Malaysian Malay ( $M = 2.48$ ,  $SD = 1.08$ ) and Malaysian Indian ( $M = 3.09$ ,  $SD = 1.93$ ) mothers. However, there were no statistically significant group difference,  $F(2, 45) = 1.711$ ,  $p = .192$ .

**Mothers' mean turn length.** Overall, Malaysian mothers used a total mean turn length of 2.54 turns per utterance within the 15-minute language sample. Malaysian Chinese mothers were found to use a slightly higher mean turn length per utterance ( $M = 2.71$ ,  $SD = 1.03$ ) with their children in comparison to Malaysian Malay mothers ( $M = 2.30$ ,  $SD = .54$ ) and quite comparably with Malaysian Indian mothers ( $M = 2.64$ ,  $SD = .90$ ). No statistically significant group differences were noted ( $F(2, 45) = 1.099$ ,  $p = .342$ ). Figure 3.11 displays the

frequency for mothers' use of language-modelling utterances by ethnicity using a boxplot graph.

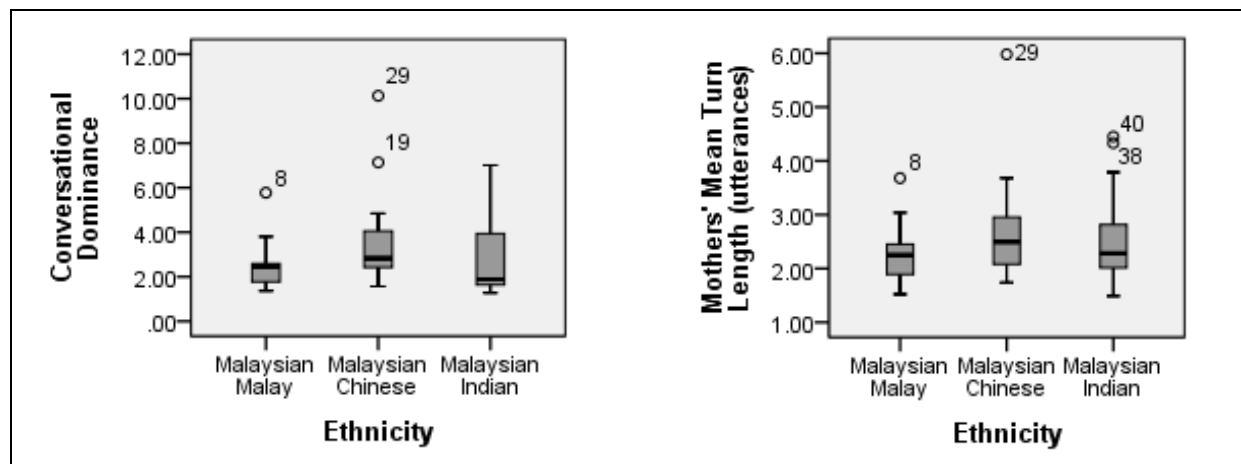


Figure 3.11 *Frequency for Conversational Dominance and Mean Turn Length across Group*

### **Key findings**

**Verbal productivity.** The speech rate (as measured by total number of words per minute) of Malaysian Indian mothers was significantly more (a statistical difference of  $p = .025$ ,  $\eta^2 = .151$ ) than Malaysian Malay and Malaysian Chinese mothers. The three groups of Malaysian mothers were found to have similar degrees of talkativeness with their children. Although the between-group means were different, no significant statistical differences were found in the use of diverse vocabulary among the sampled group of Malaysian mothers. There were statistically significant differences in the use of MLU in words between the three groups of Malaysian mothers ( $p = <.001$ ) with a very large effect size of  $\eta^2 = .356$ .

**Interaction behaviours.** The mean percent distribution for five categories of interaction behaviours for three groups of Malaysian mothers are displayed in Table 3.13.

Table 3.13

*Mothers' Interaction Behaviours in Five Categories Expressed as a Total Mean Percentage across Group*

Interaction Behaviours	Total Group Mean %			
	Malaysian Malay	Malaysian Chinese	Malaysian Indian	Mothers as total group
Behaviour control	26.53	22.0	33.33	27.15
Response control	113.88	88.94	114.87	105.88
Conversation-eliciting utterances	48.24	43.81	39.87	44.15
Language-modelling utterances	73.76	76.31	79.40	76.38
Other utterances	42.59	43.88	59.47	48.29

A summary of statistically significant group difference for measures verbal productivity, interaction behaviours, conversational dominance and mean turn length in Malaysian mothers is displayed in Table 3.14



Table 3.14

*Summary of statistically significant group difference for measures of verbal productivity, interaction behaviours, conversational dominance and mean turn length among Malaysian mothers*

	Group difference – Yes or No			Significance ( <i>p</i> )	Effect size ( $\eta^2$ )
	Malay + Chinese	Malay + Indian	Chinese + Indian		
<b>VERBAL PRODUCTIVITY</b>					
Speech rate	X <sup>a</sup>	√ <sup>b</sup> (MI) <sup>c</sup>	X	.04	.356
Talkativeness	X	X	X		
Vocabulary Diversity	X	X	X		
MLU in words	√ (MC) <sup>d</sup>	X	√ (MC)		
<b>INTERACTION BEHAVIOURS</b>					
<b>Behaviour Control (%<sup>f</sup>)</b>	(8.7)	(8.0)	(10.2)	.047	.136
Attention calls or directives	X	X	X		
Verbal prohibitions	X	X	√ (MI)		
Verbal reprimands	X	X	X		
<b>Response Control (%<sup>f</sup>)</b>	(37.3)	(32.3)	(35.13)	.019(MM) <sup>g</sup> ; .003 (MC)	.229
Commands or Behaviour directives	X	√ (MI)	√ (MI)		
Direct modelling	X	X	X		
Direct correction	X	X	X		
Directive Yes or No questions	X	X	X		
Test questions	X	X	X		
Choice questions	X	X	X		
Imitative questions	X	X	X		
Other Yes or No questions	X	X	X		
<b>Conversational-Eliciting Utterances (%<sup>f</sup>)</b>	(15.8)	(15.9)	(12.2)		
Clarification questions	X	X	X		
WH-questions	X	X	X		
Conversational Yes or No questions	X	X	X		

<b>Language-Modelling Utterances (%<sup>f</sup>)</b>	(24.2)	(57.8)	24.3)		
Imitation	X	X	X		
Partial or reduced imitation	X	X	X		
Labels	√ (MM)	√ (MM)	X	.001(MC); .034 (MI)	.252
Expansion or Extension	X	X	X		.176
Descriptions or Self-talk	X	X	X		
Connected commenting or Parallel-talk	X	X	X		
Associated Commenting	X	X	X		
Interpretations	X	X	X		
Verbal praise or Acknowledgement	X	X	X		
<b>Other Utterances (%<sup>f</sup>)</b>	(14.0)	(16.0)	(18.2)		
Responses to questions	X	X	X		
Affirmations	X	X	√ (MI)	.017	.154
Greetings	√ (MC)	X	X	.30	.134
Ambiguous or Unclear	X	X	X		
<b>Conversational Dominance</b>	X	X	X		
<b>Mean Turn Length</b>	X	X	X		

Note: <sup>a</sup>X =no group difference detected; <sup>b</sup>√ =group difference was present; <sup>c</sup>(MI)=Malaysian Indian mothers; <sup>d</sup>(MC)=Malaysian Chinese mothers; <sup>e</sup>significance level was identical for both groups; <sup>f</sup>total mean percent for subgroup; <sup>g</sup>(MM)=Malaysian Malay mothers

### 3.5.3 Analysis of children's verbal productivity measures

The children of Malaysian mothers, used a total mean of 22.96 words per minute ( $SD = 9.61$ ), range = 6.53 – 41.87). The children used a total mean of 184.50 utterances ( $SD = 57.81$ , range = 65 – 287) with their mothers. The total number of different words used was  $M = 116.71$  ( $SD = 40.13$ ), range = 42 – 191). The total MLUw used was 1.93 ( $SD = .40$ , range = 1.31– 2.76). Table 3.15 displays the descriptive statistics for children's verbal productivity measures. Alpha level was set at 0.05 with a 95% confidence interval for all measures. A one-way ANOVA revealed no statistically significant between-group difference in the children's verbal productivity measures of speech rate ( $F(2, 45) = 1.271, p = .290$ ), number of different words ( $F(2, 45) = .504, p = .607$ ) and MLUw ( $F(2, 45) = 1.729, p = .189$ ). However, a large between-group statistical difference was noted for talkativeness ( $F(2, 45) = 3.928, p = .027, \eta^2 = .149$ ). The children of Malaysian Malay mothers were found to be more talkative than children of Malaysian Chinese mothers ( $p = .047$ ). Although the mean difference between the Malaysian Indian and Malaysian Chinese group was substantial, it was not significant ( $p = .052$ ). The children of Malaysian Malay and Indian mothers engaged in similar levels of talkativeness ( $p = .999$ ).

Table 3.15

*Means and Standard Deviations for Children's Verbal Productivity Measures across Groups*

Variables	Malaysian Malay ( <i>n</i> = 17)			Children whose mothers are: Malaysian Chinese ( <i>n</i> = 16)			Malaysian Indian ( <i>n</i> = 15)		
	<i>M</i>	( <i>SD</i> )	Min-Max	<i>M</i>	( <i>SD</i> )	Min-Max	<i>M</i>	( <i>SD</i> )	Min-Max
<b>Speech rate</b>									
Total number of words per minute (WPM)	23.16	(8.35)	8.13-38.00	20.20	(8.64)	6.53-39.27	25.66	(11.57)	8.40-41.87
<b>Talkativeness</b>									
Total number of utterances (NTU)	199.76	(46.87)	118-276	153.31	(53.64)	65-240	200.47	(62.93)	97-287
<b>Vocabulary diversity</b>									
Total number of different words (NDW)	116.94	(37.97)	48-184	109.50	(35.95)	51-191	124.13	(47.49)	42-190
<b>Sentence Length</b>									
Mean length of utterance in words (MLUw)	1.79	(.39)	1.34-2.54	2.04	(.36)	1.31-2.54	1.98	(.45)	1.38-2.76

### 3.5.4 Correlation analysis between measures of mothers' and children's verbal productivity

Mothers' speech rate was positively correlated with all measures of children's verbal productivity but these were not significant. There was a significant negative correlation between mothers' talkativeness and children's MLU in words ( $r = -.397, p = .005$ ). There were no significant association between mother's talkativeness with children's speech rate, talkativeness and use of number of different words. There were significant positive correlation between mothers' use of number of different words with three measures of children's verbal productivity, that is speech rate ( $r = .302, p = .018$ ), use of number of different words (NDW) ( $r = .431, p = .001$ ) and MLU in words ( $r = .401, p = .002$ ). Mothers' mean utterance of length in words (MLUw) was positively correlated with three measures of children's verbal productivity, that is, speech rate ( $r = .241, p = .049$ ), number of different words ( $r = .265, p = .034$ ) and MLU in words ( $r = .634, p < .001$ ). A negative association between mothers' MLU in words and children's talkativeness ( $r = -.121, p = .206$ ) was noted, but it was not significant. The results are summarized in Table 3.16. A scatterplot, as illustrated in Figure 3.12, was used to visually ascertain variability in data distribution.

Table 3.16

<i>Relationship between mothers' and children's verbal productivity measures (N=48)</i>				
<b>Mother's verbal productivity measures</b>	<b>Children's verbal productivity measures</b>			
	<b>Speech rate (WPM)</b>	<b>Talkativeness (NTU)</b>	<b>Number of different words (NDW)</b>	<b>MLUw</b>
Speech rate (WPM)	.146	.085	.166	.160
Talkativeness (NTU)	-.080	.173	-.073	-.397**
Number of different words (NDW)	.302*	.140	.431**	.401**
MLUw	.241*	-.121	.265*	.634**

*Note.* \*\* Correlation is significant at the 0.01 level (two-tailed) \* Correlation is significant at the 0.05 level (two-tailed).

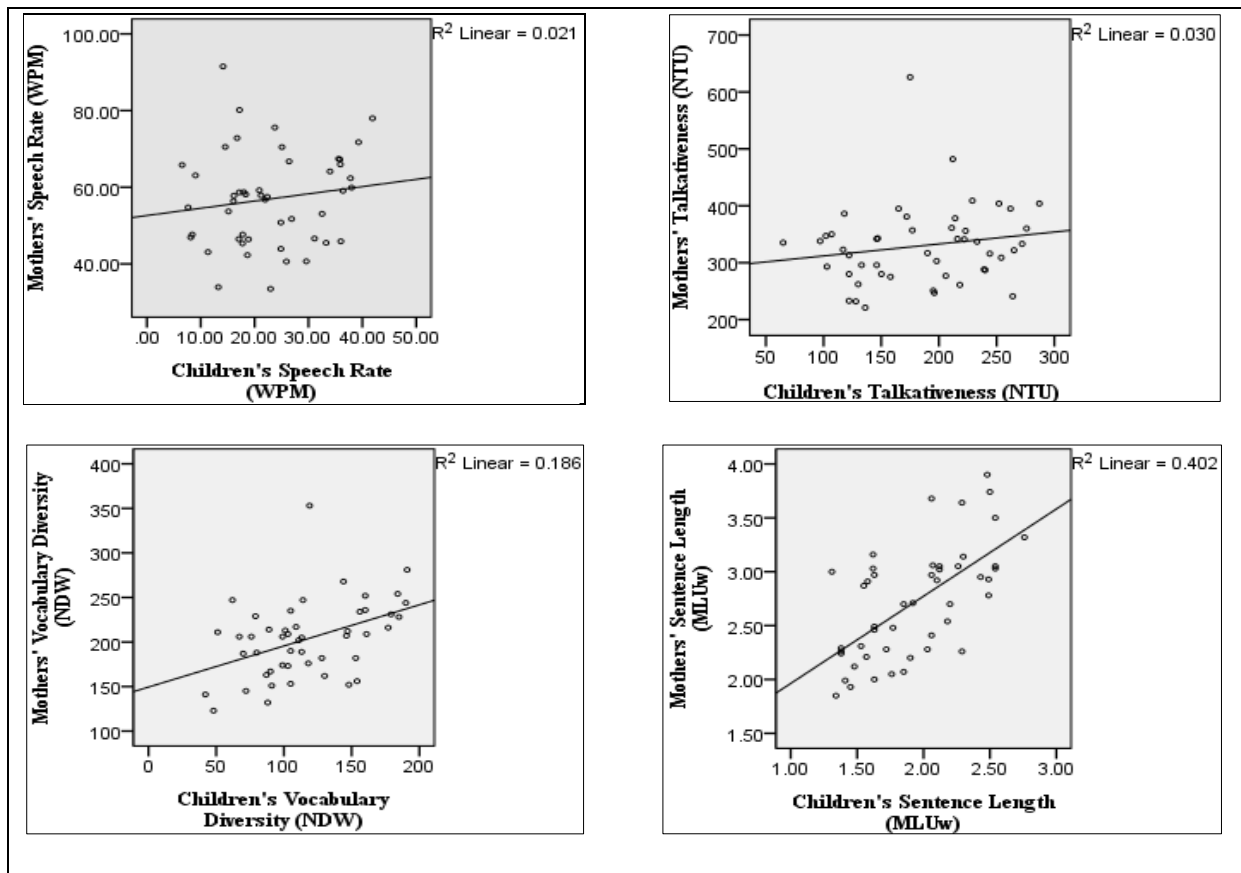


Figure 3.12 *Correlation between mothers' and children's verbal productivity measures as displayed in a scatterplot.*

### 3.5.5 Correlation analysis between measures of mothers' interaction behaviours and children's verbal productivity

A two-tailed test was calculated to measure the strength of relationship between the seven categories of mothers' interaction behaviours and children's verbal productivity measures. A two-tailed probability with an alpha level of .05 was set. A correlation coefficient  $r$  of .30 - .49 suggests a moderate relationship between two variables Cohen (1988).

A significant negative correlation was found between interaction behaviours grouped as behaviour control utterances and children's MLUw ( $r = -.304, p = .018$ ). In particular, mothers' use of verbal reprimands was positively correlated with children's talkativeness ( $r = -.297, p = .020$ ) and negatively correlated with children's MLUw ( $r = -.290, p = .023$ ).

There were significant negative correlations between mothers' response control utterances and three (of four) measures of children's verbal productivity, that is, speech rate ( $r = -.258, p = .038$ ), use of number of different words ( $r = -.244, p = .048$ ) and MLUw ( $r = -.530, p < .001$ ). In particular, there were significant negative correlation between use of commands or behaviour directives and three measures of children's verbal productivity, that is, speech rate ( $r = -.397, p = .012$ ), number of different words ( $r = -.392, p = .003$ ) and MLUw ( $r = -.335, p = .010$ ). There was a nearly large significant negative correlation between test questions and children's MLUw.

Conversation-eliciting utterances was significantly and positively correlated with only children's talkativeness ( $r = .305, p = .018$ ). Specifically, there were significant positive correlation between mothers' use of clarification questions and two measures of children's verbal productivity, that is, speech rate ( $r = .298, p = .020$ ) and talkativeness ( $r = .386, p = .003$ ). In addition, there were significant positive correlation between conversational yes or no questions and three measures of children's verbal productivity, that is, speech rate ( $r = .381, p = .004$ ), talkativeness ( $r = .352, p = .007$ ) and number of different words ( $r = .363, p = .006$ ).

As a group, there were negative non-significant correlations between mothers' use of language-modelling utterances with all measures of children's verbal productivity. However, a detailed analysis revealed that some interaction behaviours were specifically associated with some indices of children's verbal productivity. There was a significant negative correlation between mothers' use of imitation and children's MLUw ( $r = -.308, p = .017$ ). However, there was a significant positive correlation between mothers' use of partial or reduced imitation and all measures of children's verbal productivity, that is, speech rate ( $r = .362, p = .006$ ), talkativeness ( $r = .271, p = .031$ ), the use of number of different words ( $r = .432, p = .001$ ) and MLUw ( $r = .354, p = .007$ ). The use of labels was negatively correlated

with all four measures of children's verbal productivity, three of which were significant. These were children's speech rate ( $r = -.288, p = .023$ ), number of different words ( $r = -.317, p = .014$ ), and MLUw ( $r = -.514, p < .001$ ). There was significant positive correlation between use of connected commenting or parallel-talk and children's MLUw ( $r = .342, p = .009$ ). There was negative correlations between mothers' use of interpretations and all measures of children's verbal productivity, all of which was non-significant, except for talkativeness in children ( $r = -.251, p = .032$ ).

There were significant positive correlations between interaction behaviours grouped as other utterances and three measures of children's verbal productivity, i.e. speech rate ( $r = .414, p = .002$ ), talkativeness ( $r = .386, p = .003$ ) and number of different words ( $r = .403, p = .002$ ). However, a detailed sub-group analysis revealed a significant correlation for only utterances labelled as *affirmations*. A positive significant association between use of affirmation utterance was noted with all measures of children's verbal productivity, that is, speech rate ( $r = .703, p < .001$ ), talkativeness ( $r = .667, p < .001$ ), number of different words ( $r = .620, p < .001$ ) and MLUw ( $r = .315, p = .015$ ).

There were large significant negative correlations between mothers' conversational dominance with all measures of children's verbal productivity, that is, speech rate ( $r = -.770, p < .001$ ), talkativeness ( $r = -.722, p < .001$ ), number of different words ( $r = -.712, p < .001$ ) and MLUw ( $r = -.501, p < .001$ ). An increase in mothers' mean turn length in utterance was significantly associated with decreases in children's speech rate ( $r = -.516, p < .001$ ), talkativeness ( $r = -.731, p < .001$ ) and use of number of different words ( $r = -.471, p < .001$ ). The results are summarized in Table 3.17.



Table 3.17

*Relationship between mothers' interaction behaviours and children's verbal productivity measures*

Mothers' interaction behaviours	Children's verbal productivity measures			
	Amount of talk (WPM)	Talkativeness (NTU)	Number of different words (NDW)	MLUw
Behaviour control total	-.134	.034	-.210	-.304*
Response control total	-.258*	.040	-.244*	-.530**
Conversational-eliciting total	.186	.305*	.110	-.100
Language-Modelling utterances total	-.111	-.014	-.031	-.152
Other utterances total	.414**	.386**	.403**	.174
Conversational dominance total	-.770**	-.722**	-.712**	-.501**
Mean turn length total	-.516**	-.731**	-.471**	.018

\*\*Correlation is significant at the 0.01 level (two-tailed).

\*Correlation is significant at the 0.05 level (two-tailed).

### ***Key findings***

The correlation results between mothers' twenty-seven interaction behaviours and children's verbal productivity measures are summarised in Table 3.18.

Table 3.18

*Summary of the correlation results between mothers' twenty-seven interaction behaviours and children's four verbal productivity measures expressed in  $r$  value*

Mothers' interaction behaviours	Children's verbal productivity measures			
	Speech rate (WPM)	Talkativeness (NTU)	Number of different words (NDW)	MLUw
Attention Calls or Directives	-.110	-.023	-.218	-.216
Verbal prohibitions	-.177	-.091	-.178	-.178
Verbal reprimands	.038	.297*	.049	-.290*
Commands or behaviour Directives	-.327*	-.219	-.392**	-.335*
Direct modelling	.111	.232	.224	-.132
Direct correction	-.125	.034	-.114	-.203
Directive Yes or No questions	.011	-.207	.012	.196
Test questions	-.116	.209	-.086	-.482**
Choice questions	.056	.055	.048	.065
Imitative questions	.146	.193	.210	.108
Other Yes or No questions	.059	.083	.150	.037
Clarification questions	.298*	.386**	.222	-.013
WH-questions	-.069	.064	-.126	-.227
Conversational Yes or No questions	.381**	.352**	.363**	.211
Imitation	-.014	.208	.068	-.308*
Partial or Reduced imitation	.362**	.271	.432**	.354**
Labels	-.288*	-.018	-.317*	-.514**
Expansion or Extension	.194	.236	.186	.011
Descriptions or Self-talk	-.126	-.160	-.097	.025
Connected commenting or Parallel-talk	.095	-.116	.116	.342**
Associated commenting	.032	.004	.085	.067
Interpretations	-.240	-.251*	-.269	-.100
Verbal praise or Acknowledgement	.065	.014	.167	.109
Responses to questions	.076	.096	.053	.073
Affirmations	.703**	.667**	.620**	.315*
Greetings	-.081	-.079	-.061	-.029
Ambiguous or Unclear utterances	-.115	-.125	-.043	-.081

\*\**. Correlation is significant at the 0.01 level (two-tailed).* \**. Correlation is significant at the 0.05 level (two-tailed)*

### 3.6 DISCUSSION

The study examined the mother-child interactions of three subgroups of Malaysian mothers: Malay, Chinese and Indian ethnic subgroups. To date, mother-child interactions studies involving Asian populations have primarily focused on comparing Asian and Western Caucasian groups. For example, Vigil (2002) compared mother-child interactions of Chinese and British Caucasian populations living in Great Britain. Thus far, no study has examined mother-child interactions among multicultural Asian populations living in one country. The aim of this study was two-fold. First, the study set out to compare the verbal and interaction behaviours used by Malaysian mothers when interacting with their children across the three main Malaysian ethnic groups. While there is a paucity of research related to Malaysian mothers, it has been posited that Malaysian mothers, irrespective of their Malay, Chinese and Indian ethnic backgrounds held similar cultural values with other Southeast Asian cultures (Lian & Abdullah, 2001). Would Malaysian mothers across ethnic groups have similar interaction behaviours as well? Overall, the findings of the study indicated Malaysian mothers across ethnicities were more similar than different in their use of verbal and interaction behaviours when interacting with children. However, some significant and large-effect size group differences were detected in specific verbal (i.e., speech rate and sentence length) and interactions (i.e., use of verbal prohibitions, commands or behaviour directives, behaviours, labels, comments, greetings and affirmative) behaviours.

Secondly, the study sought to examine the relationship between (a) measures of mothers' and children's verbal productivity, and (b) measures of mothers' interaction behaviours and children's verbal productivity within the total Malaysian sample. Existing studies have drawn associations between maternal verbal and interaction behaviours and child language production; however, those studies were conducted primarily with Western Caucasian dyads residing in the United States, Canada and Britain (Conti-Ramsden, 1990;

Girolametto et al., 1999, Girolametto et al., 2002, Huttenlocher et al., 1991; Lasky & Klopp, 1982; Mahoney & Neville-Smith, 1996; Murray & Hornbaker, 1997; Vigil et al., 2005, etc.). In sum, these studies have examined maternal interaction behaviours grouped as language-modelling utterances or response control (directive-like) utterances. In most instances, mothers' use of language-modelling utterances was found to be positively correlated with children's verbal productivity measures (e.g., Girolametto et al., 1999, Lasky & Klopp, 1982). In contrast, maternal response-control utterances were found to be negatively correlated with children's verbal productivity measures (Murray & Hornbaker, 1997). As a result, there could be an inherent assumption or expectation for patterns of association between mothers' and children's verbal interaction behaviours to be similar across all cultural groups (van Kleeck, 1994).

Given the dearth of studies among multicultural Asian populations, this study directly examined the association between maternal verbal and interaction behaviour and children's verbal productivity in a Malaysian sample. Study findings indicated that two of the four verbal productivity measures, mothers' number of different words (NDW) and mean turn length of utterance in words (MLUw), were significantly and positively associated with children's NDW and MLUw respectively, yielding a moderate and large effect size. In addition, interaction behaviours grouped as response control utterances, and conversational dominance generated significant negative associations with children's verbal productivity measures. Interaction behaviours grouped as language modelling utterances yielded negative correlations with children's verbal productivity (though not significant). Maternal affirmations and several specific interaction behaviours were significantly and positively related to child's verbal productivity. These will be discussed with possible explanations.

In order to interpret the findings, the discussion will be organized in two sections. Section 3.8.1 will discuss the similarities and differences in the verbal and interaction

patterns of the ethnic subgroups. Section 3.8.2 will discuss the association between measures of mothers verbal and interaction behaviour and children's verbal productivity.

### **3.6.1 Comparison of Malaysian mother-child verbal interactions across three ethnicities**

#### ***3.6.1.1 Mothers' verbal productivity***

The four measures of verbal productivity used in this study were (a) words per minute (speech rate), (b) number of total utterances (talkativeness) (c) number of different words (vocabulary diversity), and d) MLUw which is an indication of sentences length. All mothers across the groups produced similar levels of talkativeness and vocabulary diversity. However, differences in the speech rate (words per minute) and sentence length (MLUw) were noted, and these were identified with large effect sizes.

With regard to speech rate, Malaysian Indian mothers used 60.9 words per minute (WPM), when compared to 50.5 WPM by Malaysian Malay mothers, a statistically significant difference. Although differences in WPM were noted between Malaysian Chinese and Malay mothers, these were not statistically significant. Malaysian Chinese mothers used a mean of 60.0 WPM when interacting with their children, indicating comparability with Malaysian Indian mothers. On the other hand, when it came to length of sentences, Malaysian Chinese mothers, when compared to mothers of Malay and Indian ethnicities, used longer sentences when interacting with their children. The MLUw of mothers of Malay and Indian ethnicities were comparable.

A possible explanation for the use of increased WPM could be linked to the linguistic characteristics of the languages used by mothers when talking with their children. All mothers of Chinese and Indian ethnicities spoke mostly English in the video interactions. However, Malaysian Malay mothers spoke different languages. More than half of Malaysian Malay mothers spoke almost exclusively in Bahasa Malaysia when interacting with their

children. Four mothers used mostly English, and another 4 mothers used both Bahasa Malaysia and English. Bahasa Malaysia (or Malay as spoken in Malaysia) language does not have single syllable words, that is, all words consist of two or more word syllables. The number of syllables in languages could have affected the speech rate, as differences between Malaysian Malay and Malaysian Chinese mothers' WPM achieved near significance levels well.

Languages (e.g., Finnish) that have longer words than English have been found to have speakers who used a faster rate of speech if their syllables per second were counted, and a slower rate of speech if words were calculated (Palmer, 1984). In this instance, the number of syllables per minute or per words, predominantly used as measure of speaking rate in different styles of English (Robb & Gillon, 2007) and in different languages (Roach, 1998) may have provided a more accurate description of speech rates in bilingual or non-English speaking language samples. Nevertheless, mothers in the current sample used a total mean 56.95 WPM when talking with their children. In their study with late-talkers, Girolametto et al. (1999) posited that a fast rate of speech ranged from 54 to 81 words. However, Broen (1972) reported that mothers of younger children ( $M = 1.75$  years old) used a mean of 69.2 WPM, whereas mothers of older children ( $M = 5$  years old) used a mean of 88.2 WPM when interacting with typically-developing children during free play. Broen (1972) described these speech rates as slow and appropriate, thus suggesting that Malaysian mothers, as a total sample, used a slow rate of speech when talking with their 2-4 year-olds. Maternal use of slow rate of speech enables the children to listen, process and understand language better (Broen, 1972; Matychuk, 2005; Snow, 2014). However, given that pauses in interactions could have influenced speech rate (Palmer, 1984), and pause time was not transcribed or analyzed in the language sample, the findings need to be interpreted with this in mind.

In addition to WPM, mothers' MLUw was significantly and positively correlated with children's MLUw. Overall, Malaysian mothers in the sample used a total mean length utterance of 2.72 words (MLUw) when interacting with their 2 – 4-year-old children ( $M = 3$ -years old). English-speaking mothers from samples in the United States appear to be using longer utterances when interacting with their typically-developing children. For example, mothers whose children's mean age was 1.78 years old used a mean length of utterance in morphemes (MLUm) = 3.58 (Hoff-Ginsberg, 1991); 2.1 years old used a MLUm = 4.47 morphemes (Hoff-Ginsberg, 1986); 2.14 years old used a MLUw = 3.54 (Vigil et al, 2005); and 2.4 years old used a MLUw = 4.16 (Rowe, 2008). Despite the use of shorter MLUw with their children, Malaysian mothers in the sample were still providing language input that was still slightly higher than children's total MLUw (1.93), indicating that maternal language input was within the child's skills (i.e., zone of proximal development), thus facilitating language development (Vygotsky, 1978).

There could be three possible explanations for Malaysian Chinese mothers' use of longer utterances with their children when compared to mothers of Malay and Indian ethnicities. Firstly, mothers' beliefs about children's language development may influence the way mothers communicate with their children (Hoff-Ginsberg, 1991; Rowe, 2008). Malaysian Malay and Malaysian Indian mothers who took part in the survey (first study) expressed similar beliefs and practice related to parent-child interactions, when compared to Malaysian Chinese mothers. In particular, more mothers of Malay and Indian than Chinese ethnicity believed it was important to emphasize teaching children during playtime, to strive for early academic achievement in children, and to ask children questions to test if they are learning. With teaching as a goal, mothers may have used shorter utterances (e.g., "It's a car", "Tell me more", "Show me the lion" "What is this?" "Look here") instead of longer descriptive-like utterances with their children (e.g., "that's a beautiful puppet", "this is the

most delicious pizza I've ever had") when interacting with their children. The examples quoted are from this thesis. Various authors have theorised that maternal use of short and simple sentences provides children with salient information to process and understand language (Matychuk, 2005; Snow, 2014). However, Hoff and Naigles (2002) posited that the use of longer, rather than shorter, utterances offered greater information about new words, their meanings and the syntactic structures used to string these words together, thus facilitating children's word learning. It may be possible that mothers of Malay and Indian ethnicities used short sentences with their children in an attempt to make it simple for children because of an inherent belief that young children may not have the ability to fully comprehend language, or parents may believe that it is their duty to teach children. In contrast, Malaysian Chinese mothers may have used longer, descriptive sentences as their focus on interaction might have been to communicate with and not teach their children. Although there is evidence that mothers used short sentences to fulfil their own communication goals rather than to facilitate language teaching (Hoff-Ginsberg, 1986), this study seem to indicate Malaysian Chinese mothers used longer, descriptive sentences in order to fulfil what seems to be a communication goal when interacting with their children. A further study on the length, type of sentences (e.g., imperative vs. descriptive) and the context in which it is used (as teaching vs. communication goal) may provide a better understanding of maternal language input and children's language development.

Secondly, maternal sentence length may be influenced by children's talkativeness level. An analysis of children's verbal productive measures revealed that children of Malaysian Chinese mothers produced the fewest number of total utterances, when compared to mothers of Malay and Indian ethnicities. It may be possible that Malaysian Chinese mothers used a higher MLUw with their children in an attempt to get children to talk more. In contrast, given that children of Malaysian Malay and Malaysian Indian mothers were mainly talkative when



compared to Malaysian Chinese mothers, the former groups may not have used as many long sentences with their children.

Thirdly, mothers' education level may have influenced the manner in which they talk with their children. Although maternal education was comparable across ethnic groups, there were differences, that is, more Malaysian Chinese mothers than mothers of Malay and Indian ethnicities held a university degree. These differences might indicate a possible influence as mothers with a higher educational level have been shown to produce longer utterances (in addition to higher vocabulary diversity and greater talkativeness) in comparison to mothers with lower educational level (Rowe, 2008). A larger sample size within the ethnic groups and statistical analysis to account for variance attributed to culture and educational level would have provided more information.

### ***3.6.1.2 Mothers' interaction behaviours***

In addition to examining verbal productivity in mothers across the Malaysian ethnic groups, the nature of the mother-child interactions was observed. Specifically, maternal interaction behaviours were examined relative to five categories: *behaviour control*, *response control*, *conversation-eliciting*, *language-modelling* and *other* utterances. Group means indicate that during the 15-minute interaction, all Malaysian mothers in the sample had primarily used response control utterances when interacting with their children. In contrast, behaviour control utterances were the least used by all mothers. In order to understand these differences, the key findings of the specific interaction behaviours that occurred within the five categories will be discussed below.

**Behaviour control utterances.** In terms of behaviour control utterances, mothers across groups were comparable in using attention calls or directives and verbal reprimands as a means to control the children's behaviour during the interactions. However, more

Malaysian Indian than Malaysian Chinese mothers used verbal prohibitions with their children. Negative commands (i.e. verbal prohibitions) are used to stop an act that has already started (Tulkin & Kagan, 1972). These may be issued for various reasons. For example, these verbal prohibitions may serve to protect the child from harm (e.g., “don’t go there”), manage behaviours (e.g., “don’t throw the toy”) or to instill good play behaviours in the child (e.g., “don’t hit baby”). The quoted examples are from this thesis. The latter may precede a directive command to play in a certain way (“pat baby gently”). The children’s intrinsic behaviour traits may have also influenced mothers’ use of verbal prohibitions. For example, an overly ‘active, explorative’ or strong-willed child may have propelled mothers to use verbal prohibitions to manage the child’s behaviour within their expectations. Parents might issue verbal prohibitions to enforce strict discipline, and to cultivate ‘good behaviour’ and learning skills in children, as stated by several authors whose work involved Malaysian families (Gomez & Suhaimi, 2014; Hossain, 2014; Hossain et al., 2005; Keats, 2000; Lian & Abdullah, 2001; Stivens, 2006; Tan, 2010), and Southeast Asian caregivers (Hwa-Froelich & Westby, 2003). The study finding implies that Malaysian Indian mothers in the sample may have been particularly interested in children demonstrating ‘proper behaviour’ during playtime, and thus used more verbal prohibitions with their children when compared to Malaysian Chinese mothers. Malaysian Chinese mothers in the sample, on the other hand, may be less concerned about regulating their children’s environment during playtime.

**Response control utterances.** Within the category of response control utterances, Malaysian mothers as a group had used more commands or behaviour directives compared to direct modelling, direct correction, test, choice and imitative questions, directive yes or no questions and other yes or no questions. In particular, more Malaysian Indian mothers than mothers of Chinese and Malay ethnicities used commands or behaviour directives when interacting with their children. These directives function as a command to direct children to

play in a certain way or demonstrate a particular action, and function to restrict children's utterances (Girolametto et al., 2000; Tulviste, 2004). As a result, the children tend to verbalize less and participate less in conversations (Tizard & Hughes, 1984; Girolametto et al., 2000). Commands (e.g., "bring the ball here", "please cut the plum", "now put the red block", examples from thesis) may be issued to teach the children. Given that the survey results (study one) indicated more Malaysian Indian than Malaysian Chinese and Malay mothers emphasized the importance of teaching children during playtime as a belief and subsequently reported teaching as frequent practice during playtime, it appears that teaching is an important aspect of play interactions for Malaysian Indian mothers in the sample. The use of commands or behaviour directives may have assisted mothers to regulate their children's environment in order to fulfil their teaching goals during interactions. In this way, children's responses and actions are moulded into the expectations mothers have for their children. However, given that Malaysian mothers across ethnic groups were comparable in using direct modelling, direct corrections, test, choice, imitative, directive- and other-yes or no questions, it may be possible that Malaysian Indian mothers' frequent use of commands or behaviour directives with children could be closely related to their frequent use of verbal prohibitions to manage their behaviour.

**Conversation-eliciting utterances.** Overall, mothers across the ethnic groups used conversation-eliciting utterances comparably. Mothers in the sample used a higher frequency of WH-Questions than clarification questions and conversational yes or no questions to promote and repair conversational breakdowns. Specifically, more Malaysian Chinese mothers than Malaysian Malay and Malaysian Indian mothers, dominated the conversations with their children and engaged in a higher mean turn length per utterance with their children. This finding suggests a degree of maternal control over conversation with children, thus contradicting the principles of the social interactionist model, which emphasizes joint play

partnerships, balanced turn-taking and following the child's lead during interactions with children. Although Asian mothers were reported to use a *controlling* parental style with their children and were observed to use directive interaction patterns with their children (Chan & Chen, 2011; Vigil, 2002), it is not specifically known why mothers of Chinese ethnicities had particularly dominated conversations with children or took more turns when playing with children. Maternal conversational dominance has been noted in Western mothers' interaction with children who are late-talkers and language-delayed in an attempt to compensate children's lack of verbal skills (Tannock & Girolametto, 1992). The finding of the current study does not suggest children of Malaysian Chinese mothers in the sample have lower verbal skills and thus necessitating maternal control over conversations. Given that all mothers who took part in the study reported that their children exhibited normal language development, maternal conversational dominance may not have taken place in the context of adapting to the child's lack of verbal skills. This finding highlights the common assumptions made when culture-specific interaction studies are used as a reference-point. Specifically, it will be inappropriate to assume that all mothers who dominated conversations and engaged in higher interaction turns with their children did so because their children were delayed in verbal language skills.

Instead, mothers may have controlled their children's conversations with the belief that they were helping the 'normal, age-appropriate talking child' to achieve better talking ability or perhaps to achieve skills that are within the family's expectation or standards. There could be other possible culturally influencing factors, for example, beliefs about how parents ought to talk with their children, teaching with parental authority (and not in partnership) and interactions that follow the adult's rather than children's agenda (van Kleeck, 1994). In addition, there could be other influencing factors, for example, mothers' educational level. Mothers from low socio-economic backgrounds were found to direct their children's

behaviours whereas mothers from higher socio-economic backgrounds were found to use language to elicit conversation from children (Rowe, 2008). This study did not consider other possible influencing factors.

**Language-modelling utterances.** Among all the utterances categorized as language-modelling utterances, Malaysian mothers as a group used more descriptions or self-talk with their children when compared to imitations, connected commenting or parallel-talk, labels, verbal praise or acknowledgement, expansion or extension, partial or reduced imitation, associated commenting, and interpretations. This suggests that the use of descriptions or self-talk (e.g., “another pair of shoes”, “now there are four vehicles”) may be a more naturally occurring interaction behaviour for the mothers in the sample when compared to the other language-modelling utterances. This might provide Speech-Language Therapists with a platform to use descriptions or self-talk as a means to model the use of other language-modelling utterances when implementing parent-based intervention programs that recommend these responsive interaction behaviours.

With the exception of two interaction behaviours (commenting or parallel-talk and label utterances), there were no significant ethnic group differences in the use of specific types of language-modelling utterances. More Malaysian Chinese than Malaysian Malay mothers used comments and labelled objects (following questions) during the 15-minute interactions with their children. Maternal use of comments, descriptions and labels are believed to provide children with the vital link between words and objects in their environment, to promote language learning in a responsiveness manner (Girolametto & Weitzman, 2002). In order to responsively engage children in interactions, parents are encouraged to follow the children’s lead, interests and focus of attention to foster reciprocal communicative exchanges with children, and not explicitly ask the child to respond or ‘perform’ (Girolametto et al., 2000; Murray & Hornbaker, 1997; Roberts & Kaiser, 2011). In this way, the parent is believed to

create a mutually responsive environment that can boost children's language and communication skills (Lieven, 1994; MacDonald & Carroll, 1992; Murray & Hornbaker, 1997).

Malaysian Chinese mothers may have used more comments or parallel-talk and labels, when compared to other Malaysian mothers, as they could be more attuned and responsive to their children needs, as the goal of interaction may be more communication-focused than teaching-focused. On the other hand, it can also be argued that the use of explicit directives (e.g., "say 'car'", "what colour is this?") with children can be construed as reciprocal, responsive communication as a mother asks questions or requests, children answer questions or respond to requests. In addition, directives serve as a direct reference to the object or activity and thus enable children to effectively make associations with the words and objects in his or her environment (Barnes et al., 1983; McCathren et al., 1995).

There has been much debate on the usefulness of directives as a means to promote and model language in children. However, several researchers have expounded the value of directives if they are issued within the context of joint attention, the child's interests or the child's current focus of attention and are within the developmental abilities of the child (Mahoney & Neville-Smith, 1996; McCathren et al., 1995). This kind of directive is referred to as follow-in directive and is believed to promote children's language skills and participation in conversations (Cress et al., 2008; Mahoney & Neville-Smith, 1996; McCathren et al., 1995). The study's coding system did not distinguish between commands or directives, or comments and labels that occurred within joint attention and non-joint attention activities. For example, the mother may have been building a block tower while the child was playing with the animal toys. If the mother had commented, "I've built a colourful tower", while the child's focus of attention was with toy animals, this utterance was coded as a comment. Similarly if a command was issued within the child's focus of attention (e.g.,

mother says to the child, “put the tiger with the wild animals”), while they were both playing with toy animals, this was simply coded as a command/directive. The examples were obtained from this thesis.

A future study that makes a distinction between maternal utterances that occur within a joint attention and non-joint attention context in cultures that tend to primarily use response control utterances (with their children) may be particularly beneficial to understand specific types of maternal interaction behaviours. Given that a recent study found that two-year-old children learnt novel words when directive utterances were used (Callanan, Akhtar & Sussman, 2014), cross-cultural studies may provide information that might otherwise be missed in culture-specific studies.

An example of polite behaviour in Malaysian culture and elsewhere is to greet one another. Greetings (e.g., “good morning”, “hello”, “hi there”, etc.) were coded to find out the extent of their use in play interactions. Although greetings were the least type of utterance used by Malaysian mothers, more Malaysian Chinese than Malaysian Malay mothers used greetings during playtime interactions with their children. This finding does not suggest, imply or equate politeness with the use of greetings. Instead, it creates awareness that greetings during play interactions may be a way to prepare children for the use of greetings with the people in their environment. During the observed recorded interactions in this study, whenever children wore the hand puppet and brought it to mothers’ attention, mothers often first greeted the puppet (e.g., “good morning” or “hello there”) and then continued by asking children questions, labelling or describing the puppet. Greetings are of particular importance to Malaysian families since they indicate respect for elders. In particular, some Malaysian Chinese families may uphold the practice of younger persons greeting older persons just prior to having their meal during family mealtimes. Perhaps the use of greetings in playtime activities serves as reminder or rehearsal for children to actively carry over this interaction

behaviour in real-life situations. It is important to find out the interaction practice of different cultures so that the family's regular interaction behaviours can be incorporated or modelled to develop new interaction behaviours. In this way, families and professionals can implement programs that are culturally sensitive.

More Malaysian Indian than Malaysian Chinese mothers were found to use affirmative utterances with children. Affirmations may have been used as an interaction behaviour to validate children's responses, that is, to let them know that they had used the correct or appropriate words or sentences. Given that more Malaysian Indian than Malaysian Chinese mothers used verbal prohibitions and command/behaviour directives with their children, affirmations may have served as a tool to compensate for negative utterances.

In order to understand the impact of these interaction behaviours on children's verbal language, the next section will discuss the findings that measured the association between mothers' interaction behaviours and children's verbal productivity.

### **3.6.2 Relationship between specific measures of mothers' verbal and interaction behaviours and children's verbal productivity**

#### ***3.6.2.1 Mothers' verbal productivity***

Two of the measures of mothers' verbal productivity, mean length of utterance in words (MLUw) and number of different words (NDW) were significantly and positively correlated with children's MLUw and NDW, yielding a moderate effect size. In addition to these measures, mothers' number of total utterance (NTU) was negatively correlated to children's MLUw. The findings are discussed below.

A positive relationship was found between mother's MLUw and children's MLUw, suggesting that increases in mothers' sentence length were correlated with increases in children's sentence length, supporting the findings of Tamis-LeMonda et al. (2012) and



Huttenlocher et al. (2002). Huttenlocher et al. (2002) posited that children who regularly heard longer, complex sentences are presented with greater opportunities to be familiar with these sentences and the various contexts in which these are produced. Thus it will enable children to ‘map’ these syntactic forms and reproduce these longer, complex sentences. Longer, complex sentences will conceivably contain a number of different words. Therefore, it was not surprising that mothers’ MLU in words was positively correlated with children’s NDW (vocabulary diversity). Thus mothers who use diverse words with their children appear to provide children with more opportunities to hear and use these words themselves, and facilitate language learning (Hart, 2004; Hart & Risley, 1995; Rowe, 2012). The results of this study show that increases in mothers’ lexical diversity (NDW) were correlated with increases in children’s NDW, a finding that is consistent with other studies that found positive associations between mothers’ and children’s vocabulary diversity (Hart & Risley, 1995; Hoff-Ginsberg, 1998; Huttenlocher et al., 1991; Rowe, 2012).

However, there has to be a degree of caution when interpreting this particular finding. Given that the language samples were obtained from mothers who interacted with their children using either or both Bahasa Malaysia and English, the NDW in the sample could be elevated and biased. This is because words that have the same meaning in two languages, for example ‘cup’ and ‘*cawan*’, were considered as two words in this study. Studies of bilingual vocabulary development have recommended the measure of children’s bilingual words when considering their vocabulary size, as both words have different word-mapping representation (Genesee, Paradis & Crago, 2004; Hakansson, Salameh & Nettelbladt, 2003; MacLeod, Fabiano-Smith, Boegber-Page & Fontolliet, 2012; Patterson, 2004). Therefore, it may be appropriate to state that the current study findings suggest that increases in mothers’ NDW were positively associated with increases in children’s NDW in interaction samples where more than one language was used. This finding contradicts Girolametto, Bonifacio, Visini,

Weitzman, Zocconi, and Pearce's (2002) cross-cultural study, who found that Italian-speaking mothers' NDW were negatively associated with children's NDW (not a significant finding). However, there was significant positive association between English-speaking mothers' NDW and children's NDW. Further correlational study involving monolingual and bilingual samples may provide information on the relationship of one vs. two languages with mothers' and children's verbal productivity measures.

In contrast to the positive association between mothers' and children's NDW, mothers' number of total utterances (talkativeness) was negatively associated with children's MLUw (sentence length). This finding highlights the role of sheer volume of maternal talk and maternal talk that contains a number of different words (Rowe, 2012). With reference to vocabulary development in children, Rowe (2012) highlighted that some researchers believed that just the quantity of maternal talk mattered, whilst others believed that diversity in vocabulary and input was vital. In this study, the negative associations between mothers' NTU and children's MLUw, and the positive association between mothers' NDW and children's MLUw suggests that maternal talk (with diverse words) and not just sheer volume of talk (NTU) has a positive association with children's sentence length. A possible explanation is that mothers who talk with diverse words provide their children with greater opportunities to not only hear these words in context but also formulate these words into sentences of different syntactic length and form (Huttenlocher et al., 1991). It may be possible that the talkative mothers in the sample would have produced the same words (that could be largely determiners) in the interactions, thus not providing children with sufficient words to use longer sentences. For example, mothers may have used "put this over here", "put that over here", "put this and that over here", instead of "put the ball on the table", "put the cup in the bag", "put the tree and lion together".

### 3.6.2.2 Mothers' verbal interaction behaviours

This section will discuss correlational findings between specific measures of mothers' interaction behaviours and children's verbal productivity. The measures for mothers' interaction behaviours discussed in this section include (a) behaviour control utterances, (b) response control utterances, (c) conversation-eliciting utterances, (d) language-modelling utterances, and (e) affirmative utterances (listed under the category of other utterances). Children's verbal productivity measures refer to words per minute, number of total utterances, number of different words, and mean turn length of utterance in words.

**Behaviour control utterances.** A medium-sized significant negative correlation was found between interaction behaviours grouped as behaviour-control utterances and children's MLUw. In particular, mothers' use of verbal reprimands was negatively correlated with children's MLUw but was positively correlated with children's talkativeness. This finding suggests an increase in mothers' use of all utterances that direct and manage children's behaviour (attention calls or directives, verbal prohibitions and verbal reprimands) was associated with a decrease in children's sentence length. The frequent use of negative commands in the form of prohibitions and reprimands (e.g., "don't do that", "how many times must I tell you?", "that is wrong!") with young children during playtime might undermine their self-esteem and confidence. In addition, these utterances do not have meaningful strings of words that can be used in sentences during playtime. Saxton, Backley and Gallaway (2005) introduced the term *negative input*, that is, parents using linguistic forms to correct children's ungrammatical utterances. The authors found that parental negative input that was not contingent to children's grammatical errors was not beneficial for children's grammatical structures. Most Malaysian children do not *talk back* or use negative commands with their parents for fear of being chastised and rebuked for disrespect and rudeness (Chan & Chen, 2011). There is a possibility that the strict hierarchal and patriarchal

structure in Malaysian families might have permitted room for parents to use their authority to reprimand children, and to remind children of their status and position in the family (Hossain, 2014). Subsequently, in their quest to obey authority or as an act of fear, the children may have been silent or used short utterances when mothers reprimanded or managed children's behaviours. Therefore, it was not surprising to note that an increase in maternal use of verbal reprimands was negatively associated with children's MLUw.

However, it was surprising to note that maternal use of verbal reprimands was positively associated with children's talkativeness, and although not significant, was positively associated with children's words per minute and number of different words. Instead of being quieter, it appears that the children in the sample talked more, perhaps to either justify or deflate the reprimand, but did so in short sentences. The result of this study is consistent with Girolametto et al.'s (2000) finding where teachers' use of behaviour-control utterances was found to be significantly and negatively correlated with children's sentence length and vocabulary diversity. It is suggestive that Malaysian mothers in the sample could have engaged in a teaching role when communicating with their children.

**Response control utterances.** Overall, response control utterances were negatively correlated with three measures of children's verbal productivity: words per minute, use of number of different words, and MLUw. In particular, increases in mothers' use of commands or behaviour directives were correlated with decreases in these three measures of children's verbal productivity. Test questions were also negatively correlated with children's MLU. Utterances that direct or command children to play or demonstrate a certain action (commands or behaviour directives), or a certain answer (from test questions) tend to require the children to perform and may not serve to model rich language input for children or stimulate children's language.

Given that these response control utterances are believed to restrict children's responses, the negative associations of these utterances with children's verbal productivity measures found in this study are consistent with the findings of Tulviste (2004), Hoff (2006), Cress et al. (2008), and Murray and Hornbaker, (1997). However, it must be noted that a direct positive association between directive utterances and children's rate of language development and verb use in vocabulary has been established in children with delayed language skills (Barnes et al., 1982; Lasky & Klopp, 1982; Tomasello, Mannle & Kruger, 1986). Although the children (in this sample) were reported to have normal language milestones, their verbal productive measures were still negatively associated with mothers' directive utterances. This might suggest that mothers' use of commands or behaviour directives could have been more likely to be driven by mothers' goals during interactions (communication or teaching goals), and not because of children's delayed language skills. This then raises the question of what is emphasized in young children. Is it verbal language competence or performance-orientated competence? If a particular cultural group does not emphasize verbal competence in children (for example the Inuit stressed physical rather than verbal competence of their children [Crago, 1990]), the communication patterns of parents would then take shape according to their expected competencies in their children.

The use of commands or behaviour directives was found to be a frequent interaction behaviour of Malaysian mothers in the sample, and this might suggest that the mothers may have preferred their children to display or perform particular behaviours, than to model or elicit language in their children. A further experimental study of mothers who use commands or behaviour directives for communication vs. teaching activities and its association with children's verbal productivity measures could be explored in the future.

This study's findings also indicated that an increase in mothers' use of test questions (performance-orientated) was negatively associated with children's MLUw. What does one

do when there are negative associations between maternal interaction behaviours and children's verbal productivity? This might not raise concern for children who are developing normally. However, for mothers who do have concerns with their children's language abilities, it might be worthwhile to talk to mothers about their communication goals when interacting with children, and focus on these in an attempt to reduce use of commands/behaviour directive utterances. A future study could determine mothers' communication goals during interactions in order to examine differences in the interaction behaviours used and the associations with children's verbal productivity. It was interesting to note that maternal use of direct modelling interaction behaviours (e.g., "say ball") was positively associated with all measures of children's verbal productivity, except for MLUw (though an insignificant finding). This suggests that specific directive utterances may be correlated with children's verbal productivity measures.

**Conversation-eliciting utterances.** A positive association was found between mothers' conversation-eliciting utterances and children's number of total utterances. In particular, the use of clarification and conversational yes or no questions was positively correlated with children's words per minute and number of total utterances. In addition, increases in use of conversational yes or no questions were associated with increases in children's number of different words. Consistent with its definition, conversation-eliciting utterances promote conversations without directing behaviour (Girolametto et al. 2000). The higher words-per-minute, talkativeness, number of different words used by the children in association with mothers' use of clarification questions and conversational yes or no questions indicates benefits of being attuned to children's interests. Mothers who use these interactions with their children are believed to provide children with opportunities to develop interaction and language skills (Pepper & Weitzman, 2004), thus facilitating their social, cognitive and emotional development (Tulviste, 2004). All Malaysian mothers in the sample had used a

higher frequency of WH-Questions than clarification questions and conversational yes or no questions to promote and repair conversational breakdowns. However, the use of WH-questions was found to be negatively associated with three measures of children's verbal productivity (non-significant finding). Although WH-questions permit an open-ended answer, it may be possible that the manner in which the questions were framed would have influenced the children's answer and subsequent participation in conversations. For example, "who likes apples?", "what did you have for lunch yesterday?" may have generated one to two word answers, when compared to "what is teddy going to do now?" "how do we make the cake?". A detailed analysis of the type of WH-questions and their association with children's verbal language productivity would pinpoint specific questions that could elicit increased language from children.

There were very large significant negative correlations between mothers' conversational dominance with all measures of children's verbal productivity. In addition, an increase in mothers' mean turn length (in utterances) was significantly associated with a decrease in children's words per-minute, total number of utterances and number of different words. This is not surprising as mothers who dominate conversations tend to take more turns in conversations, which then creates fewer opportunities for children to talk and to use diverse vocabulary and increased sentence length in conversations. Two possible reasons for the increased maternal conversational dominance are offered.

Firstly, it might be in an attempt to draw the children to participate and respond in conversations. The mother-child dyads in the sample were observed in an environment that was unfamiliar to both individuals. In addition, some children might have been overtly conscious of the video camera (stationed on a tripod) in the room, and thus might have been highly conscious of themselves. Notwithstanding other factors related to children, for example, tiredness, hunger, shyness/personality, the children may not have responded as they

would have done in normal circumstances. As a result, mothers would have taken more turns and dominated conversations in order to compensate for children's lack of verbal output in the session. Mothers' compensation or adaptations to children's responses are referred to as a "bidirectional influence in reciprocal communication" (Bell, 1979) or an 'inadequate feedback loop' (Tannock & Girolametto, 1992).

Secondly, mothers might have engaged in high levels of teaching-orientated tasks during interactions with children. Interactions that are centred on adult's goals and interests may not have sustained the children's motivation and interest in the task, thus impeding their language production (Tannock & Girolametto, 1992). Interaction observations within a familiar environment (home or school) or a longer allocated time for the child to be familiar with the new environment might have reduced some of the factors specific to the children. These influencing factors would be applicable to the entire study findings.

**Language-modelling utterances.** Overall, language-modelling utterances were negatively associated (non-significant) with all measures of children's verbal productivity. A detailed analysis revealed that these interaction behaviours generated a combination of significant positive and negative relationship with the different measures of children's verbal productivity. For example, maternal use of labels was negatively correlated with children's words per minute, number of different words, and MLUw (sentence length generating a large effect). Given that maternal labelling during interactions is believed to facilitate language learning, as children make the link between words and objects when labels are provided (Girolametto & Weitzman, 2002), the result of this study is puzzling. Perhaps the coding systems used in the study influenced the findings. The maternal labels in this study were coded following the mothers' or children's questions. For example, if the mother asks, "what is this?" and the mother answers her own question, "that is a ball", the utterance is coded as a 'maternal label'. If the child asks, "what is that?", the mothers' answer, (e.g., "puppet") is



also coded as a maternal label. The mothers were not expecting their children to respond but rather engaged in a teaching-like activity with a monologue routine of mother asking her own questions and immediately answering these (for example, “what is this?, this is a taxi”; “what do you call this?”, “this is a cow”). The labels may have provided useful information for children or even reinforced existing knowledge about the particular word or sentences. However, these labels may or may not have been given within the context of joint attention or as Girolametto et al. (1999) refers to as *responsive labelling*.

Interaction behaviours (be they labels or follow-in directives) used by mothers while the mother and child were jointly attending to or focusing on the object (responsiveness) or provided within the child’s ‘zone of proximal development’ have been found to be positively associated with children’s language skills (Mahoney & Neville-Smith, 1996; Murray & Hornbaker, 1996). The coding system developed for the study did not take into account mothers’ responsive and non-responsive labels. As a result, it is not known if increases in the use of responsive labelling by mothers in the sample would have been associated with higher verbal productivity in children. However, it appears from this study that labelling following mothers’ or children’s questions on its own may not be sufficient to stimulate children’s verbal production. In addition, given that labels are short utterances, these might have been more suited for children at the early vocabulary or syntax stage (Girolametto et al., 1999). Given that most of the children in the sample were 3 years old, the use of labels might not have provided children with sufficient language input to generate longer sentences.

Another explanation for labels being negatively related to children’s verbal productivity could be linked to mothers using two languages when interaction with children. Nearly all mothers in the study were bilingual and reported to be using more than one language when speaking with their children. Code switching or code mixing, that is, use of words from different languages in same sentence by bilingual speakers (Genesee et al, 2004; Genesee,

2015), had occurred during the interactions. Furthermore, in an endeavour to ensure children know the corresponding word in another language, mothers may have used labels to highlight or reinforce words that have same meaning in two languages. Unless the child responds in the same language, these labels may not have provided any contextual information for children to reproduce these in the video interaction.

Contrary to the findings of Lasky and Kloppe (1982), maternal imitations were found to have moderate significant negative correlation with children's MLUw. The typically-developing children in Lasky and Kloppe's study were younger ( $M = 21$  months) and with a sample total MLU of up to 2.9 words. The mean age of children in this study was 3.1 years, with a sample total MLU range of 1.31 - 2.9 words. The negative correlation between maternal imitation and children's MLU suggests maternal imitation of older children's utterances may not have provided them with sufficient language modelling for them to produce longer sentences.

However, it is surprising to find that mothers' partial or reduced imitation of children's utterances were positively related to all measures of children's verbal productivity, but was specifically significantly and moderately associated with children's words per minute, number of different words and MLUw. Partial imitation would have taken place when children produced at least two or more words. Therefore, it can be argued that partial imitation of older children's presumably longer sentences might have functioned as an affirmation on their use of longer sentences, thus providing them with positive feedback to talk more, use diverse words and increase their sentence length. Mothers who imitate their children, even partially, are letting their children know they are interested in their activities, and are believed to providing them with 'linguistically relevant information', as suggested by Lasky & Kloppe (1982). In this way, the children are anticipated to take the lead in expressing themselves, without constraining their responses. In their study, Lasky and Kloppe (1982)

developed a separate code for reduced imitation, and the authors found that this interaction behaviour was significantly and positively related to typically-developing children's MLU, but not with language-disordered children's MLU.

**Affirmations.** A surprising find is the very large positive correlation between mothers' use of affirmations with all measures of children's verbal productivity. This finding suggests that affirmative utterances provide children with a degree of maternal responsiveness in addition to letting them know that they are 'on the right track' and thus increasing motivation and interest in producing more language. However, one might argue that affirmative utterances and verbal praise or acknowledgements, coded as two different interaction behaviours for this study, might have identical meaning or intent. The definition of verbal praise or acknowledgement used in this study was, "usually short utterances that acknowledge, evaluate, or praise the child (e.g., "good job", "thank you")", (Girolametto et al. (2000), p.1114). Affirmative utterances in this study included any utterances that affirmed children's preceding statement. For example, if a child had said "I have a cow" and the mother responded by saying, "that's right" or "yes" or "ok" or "UHHUH", these were considered as affirmations, although they can be considered as evaluative utterance. The use of Bayat's (2011) specific definition of praise, that is, person praise (e.g., "good boy" or "smart girl") and process praise (e.g., "good job") might have provided a clearer distinction and useful information. Person praise, given as an appraisal of the child's character (orientating children towards performance) was found to have resulted in negative behaviours in children. In contrast, process praise, makes direct reference to the child's specific behaviour, thus believed to positively motivate children's learning (Bayat, 2011).

### **3.7 CONCLUSION**

In summary, the findings indicate that response control interaction behaviours, that is, utterances that restrict the child's responses, were most frequently used by Malaysian mothers in the sample, when compared to behaviour control, conversation-eliciting, language-modelling and other utterances. These finding will be discussed in light of theoretical language learning models, with implications for service providers in Chapter Four.

## CHAPTER FOUR

---

General Discussion and Summary, Clinical  
Implication, Limitations and Future Research

## 4.1 INTRODUCTION

This thesis examined mothers' reported interaction beliefs and practices with children across two distinct cultural groups (Malaysian and New Zealand sample) and within a multicultural subgroup (Malaysian sample consisting of mothers of Malay, Chinese and Indian ethnicities). In addition, mothers from three ethnic groups living within the same socio-cultural environment (Malaysian society) were observed interacting with their children. Further to this, the relationship between specific measures of Malaysian mothers' verbal interaction behaviours, and children's verbal productivity were examined.

Cultural beliefs influence mothers' interactions patterns with children (Crago, 1992; Rogoff, 2003). Given that early mother-child interactions provide a foundation from which children develop various skills, including language and communication (Guralnick & Neville, 1997; MacDonald & Carroll, 1992; Roberts & Kaiser, 2011), various parent-based language intervention programs have recommended the use of specific interaction behaviours when working with children with communication difficulties (e.g., Pepper & Weitzman, 2004). However, researchers have cautioned against the application of culture-specific language learning models and intervention programs for children from different cultural backgrounds (Hwa-Froelich & Westby, 2003; van Kleeck, 1994; Vigil & Hwa-Froelich, 2004). Given the absence of reported beliefs and practices related to mother-child interactions in Malaysian and New Zealand samples and the dearth of observed mother-child interaction patterns among Malaysian dyads, the purpose of this thesis was two-fold. The aims were (a) to compare the reported cultural beliefs and practices related to mother-child interaction among Malaysian and New Zealand cultures, and among three Malaysian ethnicities, and (b) to determine Malaysian mothers' verbal and interaction patterns when interacting with their children. In addition, the relationship between specific measures of Malaysian mothers' verbal and interaction behaviours with children's verbal productivity was examined. The

findings of this thesis will be consolidated to recommend a five-point guideline for SLTs to navigate belief systems.

In order to meet the thesis aims, a cross-cultural etic approach using mixed methods, that is, a survey and observation research (Aneas & Sandin, 2009; Triandis & Brislin, 1984; Triandis, 2000) was undertaken in two studies. In Study One, a survey was employed to ask two specific questions: 1) what are the differences and similarities in the reported beliefs and practices related to mothers' verbal and interaction patterns with their children among Malaysian and New Zealand mothers?, and 2) what are the differences and similarities in the reported beliefs and interaction patterns among the three Malaysian cultural groups examined in this study? In Study Two, mother-child dyads were observed interacting with one another in order to answer two other research questions. These were: 1) what verbal and interaction behaviours do Malaysian mothers use when interacting with their young children and do these differ across the three ethnic groups examined?; and 2) what is the relationship between: (a) measures of mothers' and children's verbal productivity, and (b) measures of mothers' interaction behaviours and children's verbal productivity?

Of the total 199 participants in Malaysia who took part in the survey study, 48 mother-child dyads participated in the observational study. Several measures of verbal and interaction behaviours for the survey and observational studies were chosen to answer the research questions. Data accuracy and reliability were calculated and the results were analysed using various statistical tests to answer the research questions. A summary of the study findings are discussed in light of the Ecological Systems Model (Bronfenbrenner, 1986) and three language learning models, that is, the tuitional model (Lasky & Klopp, 1982), the intentionality model (Bloom et al., 2001), and the social interactionist model (Bohannon & Bonvillian, 1997).

## **4.2 GENERAL DISCUSSION AND SUMMARY**

### **4.2.1 Study 1: Reported beliefs and practices related to mother-child interactions**

**Malaysian and New Zealand mothers.** Similar to previous findings that examined differences in mother-child interaction among Western Caucasian and Asian mothers (Johnston & Wong, 2002; McCollum, Ree & Chen, 2000; Simmons & Johnston, 2007), Malaysian and New Zealand mothers in the sample reported a number of significant, large effect differences in their beliefs and practices related to mother-child interactions. These differences concerned aspects related to the value of talk, child rearing values and learning in children. Contrary to the beliefs of other Western Caucasian mothers (Hart & Risley, 1992; Quinn, 2005), New Zealand mothers valued talkativeness in their children less than Malaysian mothers did. However, more New Zealand mothers than Malaysian mothers believed it was important for parents to be talkative with their children. The discussion within the study (Chapter Two) identified methodological differences between this study and Hart and Risley's study as a possible explanation for New Zealand mothers' reduced emphasis on children's talkativeness when compared to their Caucasian counterparts in the United States of America. It may also be worthwhile to note that values may change over time or adapt according to the environment in which individuals live, identified as changes at a chronosystem level within the Bronfenbrenner's Ecological Model (Bronfenbrenner, 1986). There could be several reasons for changes in beliefs and practices over time (e.g., migration, government policies, children's illness, etc.) and these need to be considered to understand differences.

Although Malaysian and New Zealand mothers in the sample believed that children have the intention to talk, even though they have yet to talk, thus subscribing to the intentionality model of language learning (Bloom et al., 2001), both group of mothers



reported different ways of communicating with their children. Consistent with the principles of the intentionality model, nearly all New Zealand mothers reported following children's lead during playtime and conversations, and reported frequent use of two interaction behaviours: expansions and interpretations. It might be inferred from this that New Zealand mothers viewed children as the primary *driving force* for language learning, and themselves as facilitators to *draw out* children's intentions (Bloom et al., 1996; Bloom et al., 2001). In addition, just one New Zealand mother agreed that children asked too many questions, and teaching, rather than having fun during play, was important. While no New Zealand mother agreed that parental control of conversations was necessary for children to talk better, few emphasized early academic achievement in their children. New Zealand mothers reported frequently talking with their children (in shared, non-shared and routine activities), described objects in their children's environment, and practised regular balanced turn-taking during interactions. These reported interaction behaviours are consistent with the social interactionist model of language acquisition, where reciprocal and responsive communication is emphasized in order to foster children's communication and language-learning skills (Bohannon & Bonvillian, 1997).

In contrast, when compared to New Zealand mothers, fewer Malaysian mothers reported following children's lead during playtime and conversations, reported less likelihood of using expansions and reported frequent use of behaviour-control interaction patterns. This may suggest that Malaysian mothers viewed themselves as the 'driving force' for language learning and children as active followers of a more learned and experienced conversation partner. These interaction behaviours are presumably rooted in Malaysian culture and possibly Asian culture as parents are accorded with a higher status than children (Chan & Chen, 2011). Children are expected to obey and respect parents, as 'parents know children better than children know themselves'. Driven by an inherent motivation to teach children, be

it through cultural values or language skills, Malaysian parents appear to shape their interactions with children to fulfil their own agenda or goals. Therefore it is not surprising that most Malaysian mothers believed children asked too many questions, emphasized the importance of teaching, rather than having fun during play, highlighted the importance of early academic achievement, and believed that it was important for parents to control conversations in order for children to talk better. Most Malaysian parents reported frequently telling the child what to do (issued commands), used direct modelling, direct corrections, verbal reprimands, directive yes or no questions and higher turns during interactions. These reported interaction behaviours are consistent with the tuitional model in language learning (Lasky & Klopp, 1982) where explicit instructions and corrections are accentuated in order to promote children's language learning and communication development.

The distinct reported interaction belief and practices among Malaysian and New Zealand mothers appear to be entrenched in their different cultural ideologies (Kagitcibasi 2005; Markus & Kitayama, 1991; Matsumoto & Yoo, 2006). Malaysian culture, uniform with other Asian cultural groups (Chan & Chen, 2011), is primarily a collectivist culture (Hossain, 2014). Family interdependence, collective goals, and family or community success are valued over independence, personal goals and individual achievement. As such, parents nurture these values in their children at a very young age, accentuating politeness, respect for elders in the family and older adults, compliance and dependability in their children. Concomitantly, more Malaysian than New Zealand mothers valued their children learning family values and using kinship titles with adults who are not family members, and accepted the advice of grandparents and elders in raising children. In addition, Malaysian mothers believed that boys and girls have different communication needs, which may be suggestive of a traditional gender role assignment, that is, boys prepared for the role of a patriarch and provider in the family, and girls as gentle nurturers in the family. In contrast, New Zealand mothers, as with

other Western Caucasian cultural groups (Markus & Kitayama, 1991), appear to be primarily an individualist culture, where early independence, personal choices or goals and individual achievement are instilled in young children. In addition, New Zealand mothers appear to emphasize equality rather than authority in interactions with children (engaging in joint-partnership) and raising children (joint responsibility of parents rather than involving grandparents or elders). In addition, boys and girls are believed to have similar communication goals, thus parents are most likely to provide equal opportunities and education for children irrespective of their gender.

**Among Malaysian mothers of Malay, Chinese and Indian ethnicities.** The findings of this study suggest that the interaction beliefs and practices of Malaysian mothers across the three ethnicities are more similar than different. However, it may be worthwhile to note that Malaysian Malay and Malaysian Indian mothers reported similar beliefs, whereas Malaysian Chinese mothers reported different values on a few survey items. When compared to Malaysian Malay and Indian mothers, significantly fewer Malaysian Chinese mothers believed children asked too many questions and believed in the importance of accepting grandparents' advice in raising children, teaching children during playtime, emphasizing early academic achievement, controlling conversations with children so they talk better, and doing things for children, even if they can do it themselves. Malaysian mothers across ethnic groups reported similar interaction practices on all discourse items with the exception of one item. Malaysian Chinese mothers reported more turn-taking with their children than the other two groups of mothers. Although group differences in turn-taking were detected between Malaysian Malay and Indian mothers, these did not reach significance level. At a micro level, the findings are suggestive that Malaysian mothers within the sample seem to have similar cultural beliefs and even more similar practices related to mother-child interactions. The findings of this study affirm Hossain's (2014) view that Malaysians adopt the

collective/interdependent cultural ideology, and Lian and Abdullah's (2001) assertion that Malaysians, irrespective of Malay, Chinese and Indian ethnicities, shared similar cultural values. However, the interpretations of the results are to be viewed with caution as demographic information revealed that significantly more Malaysian Chinese mothers, when compared to Malaysian Malay and Indian mothers, held a university degree, suggesting the influence of higher education on mothers' views on beliefs and practices related to mother-child interactions, as indicated by Hoff-Ginsberg's (1991) study findings.

### **Study 2a: Observed mother-child interactions among Malaysian mothers**

Two aspects of mother-child interactions were studied verbal productivity and interaction behaviours. These interaction patterns are described, and differences across ethnic groups highlighted in the sections below.

**Verbal productivity.** Mothers' verbal patterns were described as verbal productivity measures that quantified speech rate (measured as WPM), talkativeness (total number of utterances), vocabulary diversity (number of different words), and sentence length (MLUw). Whilst mothers across ethnic groups exhibited similar talkativeness and vocabulary diversity levels, they differed on measures of speech rate and sentence length. Malaysian Indian mothers used more WPM with their children than Malaysian Malay mothers but were comparable with Malaysian Chinese mothers. The difference could be attributed to the type of languages used by the mothers when interacting with children. Bahasa Malaysia, the language used mostly by Malaysian Malay mothers in the sample does not have single syllable words, and as such could have affected maternal speech rate, as found in other languages with similar linguistic properties (Palmer, 1984). Given the sampled Malaysian Chinese and Indian mothers spoke mostly English with their children, this finding suggests the use of syllables per minute or syllables per words to measure speech rate among Bahasa

Malaysia speakers might have been a more appropriate measure than WPM. The use of syllables per minute or syllables per words have been found to be a better measure in some non-English speaking language samples (Roach, 1998) and in different varieties of English (Robb & Gillon, 2007).

In addition to WPM, Malaysian mothers across ethnicities differed in their use of MLUw. Overall, Malaysian mothers in the sample appeared to use shorter sentences when interacting with their children, when compared with studies of English-speaking mothers (with children of similar age) from the United States (Hoff-Ginsberg, 1986, 1991; Rowe, 2008). However, Malaysian mothers' MLUw appears to be within the child's zone of proximal development, thus facilitating language development (Snow, 2014; Vygotsky, 1978). This finding suggests that direct MLUw comparisons with studies involving English-speaking participants may not offer useful information about non-English speaking children's grammatical structure. This might be pertinent in instances where a different variety of English is spoken (e.g., Malaysian English) or when there are two or more languages spoken. Instead, the linguistic properties of the particular languages spoken and the type of language input might need to be considered when differences in MLUw are examined in cross-cultural samples. Specifically, Malaysian Chinese mothers were found to use higher MLUw with their children, when compared to Malaysian Malay and Indian mothers. Factors related to Malaysian Chinese mothers' belief in reduced emphasis on teaching-like activities, and their slightly higher educational level (Hoff-Ginsberg, 1986; Hoff & Naigles, 2002; Rowe, 2008) were considered as possible explanation for the higher value of MLUw by Malaysian Chinese mothers.

**Interaction behaviours.** Maternal interactions behaviours were categorized into five exclusive groups, that is, behaviour control, response control, conversation-eliciting, language-modelling and other utterances. Overall, Malaysian mothers across ethnicities

employed more similar than different interaction behaviours during the video interactions. The findings indicate that response control interaction behaviours, that is, utterances that restrict the child's responses, were most frequently used by Malaysian mothers in the sample, when compared with the other four interaction behaviour categories.

There were few significant, large-sized effect differences in specific interaction behaviours among the ethnic groups (i.e., use of verbal prohibitions, commands or behaviour directives, behaviours, labels, comments, greetings, and affirmative behaviours). In particular, when compared to Malaysian Chinese mothers, Malaysian Indian mothers were found to have used more verbal prohibitions (negative commands, e.g., "don't throw the cup"), commands or behaviour directives (e.g., "take the blue ball"), and affirmative utterances (e.g., "that's right", "yes", "correct") during the interactions. All examples quoted were derived from the language samples obtained for this thesis. The use of these behaviours could be possibly driven by a motivation to instill 'proper good behaviour' as valued by Malaysian families (Gomez & Suhaimi, 2014; Hossain, 2014; Hossain et al., 2005; Stivens, 2006). In addition, it may be possible that there could be an added emphasis on teaching children, thus the issue of commands or directives to fulfil adults' teaching agenda, instead of following children's lead (Girolametto et al., 2000; Tulviste, 2004). The use of affirmations may have been used as a means for positive reinforcement, possibly to validate good behaviour or responses.

More Chinese mothers than Malaysian Malay and Indian mothers dominated conversations with their children and used a higher mean turn length with their children. Parental control of interactions was reported among Asian families (Chan & Chen, 2011) and among British Chinese when they were observed interacting with their young children (Vigil, 2002). In this study, parental control of conversations (to enable children to talk better) was a belief subscribed to by most Malaysian Malay and Indian mothers, but not Malaysian

Chinese mothers. It may be possible that Malaysian Chinese mothers dominated conversations and took high mean turn lengths with their children in an attempt to elicit talk from their children, as commonly observed in mothers with children who are language delayed (Tannock & Girolametto, 1992). Although the children of Malaysian Chinese children were reported to be typically-developing by their mothers, these children exhibited reduced number of total utterances (talkativeness), when compared to the other children in the sample. This finding suggests the need to highlight beliefs concerning parental control of conversations, parental expectation of level of verbal competency in their children, and the need to objectively assess children's language skills.

With regard to language-modelling utterances, more Malaysian Chinese than Malaysian Malay mothers used labels, comments and greeting utterances during the sampled video interactions. These interaction behaviours could have been used in an attempt to foster responsiveness communication in order to encourage language learning in children (Girolametto & Weitzman, 2002). In addition to language-modelling utterances, Malaysian mothers were observed to use a number of greeting utterances (e.g., "good morning teddy") during play interactions with their children. Greeting utterances could have functioned as a means to rehearse culturally appropriate behaviours interactions with adults. The use of proper greetings by children is particularly emphasized in Malaysian societies (Stevens, 2006, Gomez & Suhaimi, 2014; Hossain, 2014; Hossain et al., 2005).

In summary, Malaysian mothers, irrespective of their ethnic groups, used fewer language-modelling utterances, when compared to response control utterances, during interactions with their children. These findings suggests maternal use of language-modelling utterances, as prescribed by social interactionist model (Bohannon & Bonvillian, 1997) to facilitate reciprocal communication, interaction and language learning in children, may not be a common occurrence among Malaysian mothers within the sample. Instead, the use of

response control utterances, interaction behaviours associated with Tuitional Modelling (Lasky & Klopp, 1982) appears to be the more commonly observed interaction behaviour among the Malaysian mothers in the sample.

### **Study 2b: Relationship between specific verbal interaction behaviours measures**

This section will summarize correlation findings for i) measures of mothers' and children's verbal productivity, and ii) measures of mothers' interaction behaviours and children's verbal productivity.

**Mothers' and children's verbal productivity measures.** The study findings show two identical measures of mothers' and children's verbal productivity were largely related to each other. Consistent with the findings of Tamis-LeMonda et al. (2012) and Huttenlocher et al. (2002), mothers' and children's MLUw were significantly and positively related to each other. In addition, increases in mothers' NDW were correlated with increases in children's NDW, supporting previous findings (Hart & Risley, 1995; Hoff-Ginsberg 1998; Huttenlocher et al., 1991; Rowe, 2012). This study finding suggests association between verbal productivity measures derived from a Malaysian bilingual mother-child language sample is parallel to the results of other culture-specific studies, as listed above. This might indicate Malaysian children in the sample may share similar learning pathway with other monolingual children, that is, mothers who use longer sentences and diverse words, even in two languages, provide opportunities for children to 'map' syntactic structures and use these words themselves. However, interpretation is cautioned. The study results could be biased as the use of two languages (in the language sample) might have elevated the NDW and sentence length, even if these words have similar contextual meaning. Although measures of the same words in two languages is recommended among bilingual children (Genesee et al, 2004), this study did not make a distinction between monolingual vs. bilingual language input or verbal



output. A further study on verbal productivity measures with bilingual and monolingual samples may be necessary as Girolametto et al. (2002) found contradictory results when they compared Italian and English speaking mothers' NDW.

**Mothers' interaction behaviours and children's verbal productivity measures.**

Consistent with previous studies (Hoff, 2006; Mahoney 1988; Mahoney & Neville-Smith 1996; Murray & Hornbaker, 1997; Prizant, Wetherby & Roberts 1993; Tulviste, 2004), the current study findings indicate that conversation dominance and interaction behaviours grouped as response-control (directive-like) utterances produced significant, negative associations with children's verbal productivity measures. Although there is evidence of a positive association between maternal directive-like utterances and children's language development and verb use (Barnes et al., 1982; Lasky & Klopp, 1982; Tomasello, Mannle & Kruger, 1986) this study found that maternal response control utterances were positively related to children's number of utterance; however, the finding was insignificant. Given that directive utterances issued within a joint attention context or contingent to children's interest have been found to be beneficial for children's language skills (Mahoney & Neville-Smith, 1996), this study did not consider joint attention as a coding criteria for response-control utterances. A further study on the subject matter would be beneficial, especially among cultural groups that use mainly response-control utterances with their children.

Interaction behaviours grouped as language modelling utterances yielded a non-significant negative relationship with children's verbal productivity. The study results are puzzling as these utterances have been shown to promote children's language learning and vocabulary skills (Bloom et al., 1996; Conti-Ramsden, 1990; MacDonald & Carroll, 1992; Snow, 1972). However, the children in the sample were reported to be typically-developing with no concerns for speech or language difficulties. The study findings are inconsistent with several culture-specific studies that have positive correlations between these utterances and

children's verbal productivity measures (Girolametto et al., 1999; Girolametto et al., 2002; Girolametto and Weitzman, 2002; Newport et al, 1977), and studies with multicultural populations (Rowe, 2012; Tamis-LeMonda et al., 2012). However, specific interaction behaviours, that is, reduced or partial imitation, affirmations and comments were found to be significantly and positively associated with some measures of children's verbal productivity. This suggests that specific interaction behaviours may need to be studied as individual behaviours, rather than grouping these as valuable information might be missed.

### **4.3 CLINICAL IMPLICATIONS**

The findings have several implications for Speech-Language Therapists (SLTs) working with families from multicultural backgrounds, particularly in aspects related to knowledge of cultural beliefs and practices related to mother-child interactions and application of existing culture-specific language intervention programs. This section will highlight implications with reference to the term 'culture', Bronfenbrenner's (1986) Ecological Model, and provide a five-point guideline to navigate belief systems when implementing culture-specific language intervention programs across diverse populations.

First, the thesis highlighted the term 'culture' or 'cultural values'. Several definitions of culture, and beliefs and practices related to mother-child interactions were explored using two research methodologies. The combined use of surveys and observations was particularly useful in obtaining and understanding cultural values and practices, as it allowed the author to examine a range of beliefs in a non-intrusive manner and observe specific maternal interaction behaviours when mothers interacted with their children. As such, it is recommended that SLTs use survey and observations to obtain information regarding cultural values and practices specific to each diverse family at the initial speech-language therapy

session. Drawing upon specific findings from the study, the section below will elaborate on this suggestion.

With reference to Hofstede's (2001) Onion Diagram (Figure 1.1) that illustrated cultural levels and depth, the author remarked, "Cultural values are invisible until they become evident in behaviour, but culture manifests itself in visible elements too" (Hofstede, 2001, p.10). Unless one asks the individual or community specific questions about cultural values, there is a danger of using existing knowledge and experience to decipher the behaviour. For example, Hossain (2014) reported Malaysian society adopted an interdependent or collective cultural ideology. Without delineating the specific cultural values, Lian & Abdullah (2001) asserted that Malaysians, irrespective of their ethnicities, shared similar cultural values with other communities in the Southeast Asian region. In contrast, Ng (1998) and Janssens et al (2015) argued that each ethnic group in Malaysia is distinct since each group has retained its own culture, beliefs, customs, languages, food, and so forth (Ng, 1998; Janssens et al., 2015).

The conflicting information in the literature may result in one using personal experiences or biases (ethnocentrism) to interpret the beliefs and interaction practices related to mother-child interactions among Malaysian mothers across ethnic groups. Pickering (2003) stressed the need to abandon personal ethnocentrism when working with culturally diverse families. Following the thesis' findings, this author emphasizes the need to use two research methodologies, a survey to ask values that are 'invisible' and observations to see 'visible evident interaction behaviours', to make an informed decision on differences and similarities among cultural groups. The findings revealed that although Malaysian mothers across ethnic groups differed in a few interaction practices, they used mostly similar interaction behaviours when observed interacting with their young children. If the viewpoints of Janssens et al (2015) and Ng (1998) were to be adopted, one might make an erroneous

conclusion that obvious distinct cultural differences are a general occurrence across all context and environmental layers (for example, in this instance, distinct interaction behaviours across ethnic groups). Similarly, if the viewpoints of Lian and Abdullah (2001) are adopted in entirety, one might overlook vital differences in the interaction behaviours used by Malaysian mothers of various ethnicities, which may result in misunderstandings.

In his Ecological Systems Model, Bronfenbrenner (1986) emphasized the need to consider the attitudes and ideologies of the culture (within the macrosystem environmental layer) in order to understand how families organize the environment for their children. In order to find out the perceptions and ideologies within a culture, it could be suggested from this thesis findings that the individual's beliefs and attitudes at the macrosystem environmental layer be considered along with Hofstede's definition of culture, particularly for language intervention programs concerning mother-child interactions. It is recommended that beliefs are directly obtained from the individual concerned or family members—either through survey or discussions, and observations—rather than to make assumptions based on general knowledge and personal experience.

When using surveys to obtain information on cultural values, SLTs may need to consider that individuals' answered questions or expressed values/opinions may not always translate into evident practice behaviour within a particular context. For example, in response to the belief survey statement "Young children learn to talk better when parents take control of the conversation", significantly fewer Malaysian Chinese mothers than Malaysian Malay mothers, indicated agreement with the statement. However, in the observational study, the conversational dominance ratio for Malaysian Chinese mothers was higher than for Malaysian Malay mothers, suggesting that values may not always be evident in behaviour, or may be adapted to meet the needs of children within a new environment. The child's characteristics (e.g., shy, lack of response due to new environment, poor language skills, etc.)

may need to be considered as an influencing factor for increased maternal conversational dominance when evaluating the interaction context.

Bronfenbrenner (1986) identified the exosystem (e.g., extended family) and mesosystem (e.g., immediate family structure) within the Ecological Model as environmental layers that could potentially invoke certain functions and influence specific parental behaviours concerning children. The study findings indicate that more Malaysian than New Zealand families lived with extended family members, and placed importance on accepting grandparents' or elders' advice in raising young children. Significant differences among Malaysian mothers across ethnic groups were also noted. SLTs working with families from diverse backgrounds may need to consider the role and influence of extended family members within the family. Grandparents may not only accompany children in speech-language therapy sessions but may also want to take an active role in the intervention programs. In some extended families where both parents hold full-time jobs, grandparents may act as the main caregiver in the daytime and it may be worthwhile for SLTs to explore their role with families at the initial visit. Perhaps a future study may want to consider examining the role of grandparents in speech-language therapy session, especially in communities that live with extended families and cultures that emphasize family interdependence.

In addition to extended family members living under the same roof, families organized within hierarchical and patriarchal structure, as with Malaysian society (Hossain, 2014), may not engage in joint-partnership interactions with their children. The study findings showed that more New Zealand than Malaysian mothers reported following their children's lead in conversations and play. As such, it is suggestive that mothers in the sample may not have readily allowed their children to take the lead in conversations and play. The SLT may need to discreetly negotiate ingrained family structures, values and interaction practices when

implementing language intervention programs that suggest joint play partnerships with children (Pepper & Weitzman, 2004).

In terms of verbal productivity, Malaysian mothers' total MLUw when interacting with their children, although apparently within their children's zone of proximal development, seem to be lower when compared with other reported studies involving Western Caucasian mothers and their children. Malaysian children's MLUw was also found to be significantly lower when compared with other similarly-matched children's MLUw in existing literature. If direct comparisons were to be made with other studies (with Western Caucasian participants), the study finding may indicate that Malaysian children in the sample (though typically-developing) are lagging behind in verbal abilities. Direct comparison with other established studies with participants of different characteristics may not be particularly useful. As such, the service provider may need to consider the family and children's bilingual language environment, in addition to children's language skills.

#### **4.4. RECOMMENDED GUIDELINES TO NAVIGATE CULTURAL BELIEF SYSTEMS**

Given that several language intervention programs (e.g. The Hanen Parent Program, It Takes Two to Talk, Manolson, 1992; Pepper & Weitzman, 2004; Responsive Interaction Strategies, Kaiser et al., 1996; Kaiser & Hancock, 2003) recommended use of language-modelling utterances with children with communication difficulties, how can the SLT adapt these programs for families who use a different interaction pattern with their children? Drawing from specific examples from the thesis findings, the next section makes some suggestions to navigate belief systems when implementing these programs across

multicultural populations. These suggestions function as a guideline to enable SLTs and caregivers to explore aspects within the parent-interaction pattern that can attribute to

1. cultural *Identity*
2. cultural *Ideologies*
3. how caregivers *Interpret* these values
4. how caregivers *Integrate* their belief systems in interactions, and
5. the extent of caregivers' *Adaptability* in learning and using new interaction behaviours.

By establishing the above, the SLT would be able to build on caregivers' existing use of language-modelling utterances to expand on other specific interaction behaviours within the intervention program. The definition and functions for each construct with examples from study findings are outlined below.

## 1. Cultural Identity

**Definition:** refers to the individual's core cultural identity. For example, this could be their ethnicity, nationality, language, religious beliefs, and so forth (Mistry & Wu, 2010).

**Rationale and function:** to assist caregivers to reflect on the core features of their cultural identity and to help them delineate parent-interaction patterns characteristics that are related to their core cultural identity. For example, does the use of particular interaction styles affect their cultural identity?

**Study findings:** cultural differences in beliefs and interaction patterns were based on participants' ethnicity. Other factors, for example, religious beliefs, languages, were not considered. In some cultures, the religious beliefs of families, rather than ethnicity, may be the determining factor in how parents shape their interactions with their children. For example, Muslim families tend to organize their parenting and child-rearing practices around the Islamic faith (Omu & Reynolds 2012; Sen et al., 2014; Sharifzadeh, 2011; Taleb, 2013;

Taleb & AlZoubi, 2015). In particular, Keats (2000) remarked that religion and culture for Malaysian Malays were inseparable. In some instances, acculturation (adapting one's own native cultural identity in order to merge into the host country's identity) and assimilation (forgoing one's own native cultural identity to acquire a new identity) may need to be considered, especially when working with new migrant populations (Londhe, 2015). The author suggested the use of Stephenson Multigroup Acculturation Scale (SMAS) to outline the extent of cultural immersion for any ethnic group in order to provide clinical services.

**Possible value:** by identifying the respective family's cultural identity, the SLT will be able to understand the context in which family interactions have taken shape. This would subsequently assist the SLT to engage in open and culturally sensitive discussions to identify interaction patterns that are closely knitted into cultural identity, and build on new interaction patterns without compromising the family's cultural identity.

## **2. Cultural Ideologies**

**Definition:** refers to a set of beliefs, attitudes, values, perceptions that underlie, justify and legitimate their cultural status (Apple, 2004 cited in Alfaro, 2008).

**Rationale and function:** to assist caregivers to reflect on the features of their culturally rooted beliefs, attitudes, values, behaviours (ideologies) pertaining to parent-child interactions and to help them delineate ideologies that are linked to their core cultural identity.

**Study findings:** for example, for the belief item: 'it is important to teach children as they are too young to think on their own', significantly more Malaysian than New Zealand mothers indicated agreement with the statement. Although the study did not specifically find out the root of the mothers' belief for this particular statement, it would be worthwhile to ask mothers to reflect on specific beliefs. By engaging in reflective discussions with mothers or families, SLTs could better understand the root of their beliefs. In addition to the above, it



could also be an avenue where mothers or families are presented with current evidence-based knowledge pertaining to children's language development with a view to elicit their opinion on the existing literature. Would literature or 'new' scientific knowledge bring a shift or maintain the mothers' belief? Would it then subvert caregivers' cultural identity?

**Possible value:** ideologies can change with experience, over time, context or situation. By identifying and understanding ideological aspects that are fundamental and those beliefs that can or cannot be changed, the SLT would be in a better position to implement interaction behaviours that will not only benefit the child but also one that does not challenge the family's core values or ideologies.

### 3. Interpretation

**Definition:** refers to how the individual attaches meanings, explains, construes or executes a particular behaviour related to their cultural ideologies.

**Rationale and function:** to understand how and why caregivers attach meanings to their beliefs and behaviours on aspects related to parent-child interactions. Individuals from within and across cultures may interpret a particular belief or behaviour differently.

**Study findings:** the results from the observational study indicate Malaysian mothers were primarily using response control (directive-like) utterances when interacting with their children. The use of language-modelling utterances was not observed to be a common interaction pattern used by most Malaysian mothers with typically-developing children within the sample. The study findings suggest the use of maternal response control behaviour utterances with children could be possibly linked to mothers' emphasis on teaching, and early academic achievement in children. As such specific interaction behaviours, for example, commands or behaviour directives, verbal prohibitions, conversational control, could have been used to fulfil mothers' teaching agenda. How would caregivers' interpret the use of particular interaction patterns with their children? Are the interaction patterns motivated from

an inherent belief based on knowledge or from experience of past generation, or shaped by cultural ideologies or religious beliefs?

**Possible value:** SLT's understanding of *why caregivers do what they do* will enable the SLT to interpret caregivers' behaviours based on the caregivers' own views and experiences and not based on the SLTs 'pre-loaded' assumptions. Pickering (2003) highlighted the need for SLTs to abandon their own individual 'ethnocentrism' (aspects one is familiar or experienced with) and adopt a 'multidimensionality' concept, that is, interpreting the other person's perspectives to develop practices that are culturally sensitive. By engaging a multidimensionality view, the SLT may be able to develop specific interaction behaviours within the evidence-based intervention program and implement a culturally sensitive intervention program. In this way, the SLT might be able to assist caregivers in their understanding of *why SLTs propose what they propose to do*.

#### 4. Integration

**Definition:** refers to the degree of integration of cultural identity, ideologies and interpretation of values into everyday mother-child interaction practices.

**Rationale and function:** to assist caregivers to think about their beliefs and practices related to interaction patterns with their children. How much of a caregivers' beliefs or values is actually related to and integrated in interactions with children?

**Study findings:** with reference to the example of maternal conversational control, beliefs may not necessarily translate into practice. Other influencing factors (e.g., children's responsiveness or new environment) could have triggered particular interaction behaviours. Do beliefs change over time, over interaction context and environment or for other reasons? If beliefs are not integrated into everyday interactions, could it be possible that maternal interaction behaviours are influenced by other factors (e.g., maternal education, interaction context, children's context)? Is it possible to entangle cultural values or culturally rooted

interaction behaviours from these other factors when considering mothers' interaction behaviours? This could be an area of future research.

**Possible value:** when caregivers are engaged to talk about their beliefs—beliefs that are integrated into practice, beliefs that are rooted in culture, and beliefs that can change according to other factors—SLTs may be able to help caregivers reflect upon their own interaction patterns with children. This might provide the SLT with an avenue to introduce caregivers to new/unfamiliar interaction patterns, which may subsequently aid in training caregivers to use interaction behaviours recommended by language intervention programs. In this way, misinterpretations and overgeneralization of cultural behaviours can be minimized.

## **5. Adaptability**

**Definition:** refers to aspects of cultural identity, ideologies and interpretations that can be changed, modified, or abandoned, or the emergence of a new 'identity, ideologies or another interpretation'.

**Rationale and function:** to explore aspects of caregiver's interaction patterns that are firmly tied to their cultural heritage or identity or ideologies and those that are not. In some multicultural societies, caregivers may not associate all of their interactive behaviours to their 'traditional' cultural identity or ideologies. As a result, the introduction of different or new interaction behaviour may not be seen as a challenge to their existing belief systems. On the other hand, a caregiver may firmly hold onto a particular way of interaction as it defines their cultural identity and values. Here, the introduction of new interaction patterns may be dismissed or rejected by the family. Some caregivers may be willing to 'modify' their belief systems when faced with children with language difficulties. Other caregivers may want to learn new interaction patterns and do not see these as an overt change to their cultural identity and values.

***Study findings:*** although mothers were interviewed (post-observation study) to obtain viewpoints on culture and adaptability in learning new interaction behaviours, these interviews were not analysed for this thesis. However, these interviews yielded rich information about mothers' viewpoints on specific assumptions (e.g., definition of culture).

***Possible value:*** when the caregivers' level of adaptability in learning and adopting new interaction behaviours are explored, SLTs may be able to provide a service without the apprehension that a cultural belief or identity has been compromised or disrespected.

In summary, although several implications were outlined, it must be acknowledged that cultural identity and ideologies can be intricate and firmly integrated in mother-child interactions. It might not be possible or even feasible to delineate or disentangle cultural influences from interaction behaviours. However, by engaging caregivers in open discussions about their cultural values and everyday interaction patterns by using the five-point guidelines, the SLT may be able to eliminate personal 'ethnocentrism' and embrace a multidimensionality view when working with diverse populations. In this way, the SLT may be in a better position to consider and value the individual family's perspectives and interaction practices, and build on existing interaction behaviours, or to introduce new interaction behaviours. For example, this thesis finding indicates that mothers were using labels as language-modelling utterance behaviour. Mothers can then be specifically trained to use these labels within joint attention activities with children or expand labels to provide descriptions within the same context.

#### **4.4 LIMITATIONS**

The study findings should be viewed in light of several limitations. These limitations concern the use of survey research, coding of language samples, frequency measures, and demographic factors. These are briefly considered below.

**Survey research.** Although surveys can generate large-scale data responses in a relatively easy, cost-effective and non-intrusive manner, the context in which respondents completed the survey may not be uniform. For example, given that the study sought to unravel cultural differences, some respondents may have provided answers that could have been ‘culturally appropriate’ but not reflect their actual belief or practice. In addition, the manner in which the survey constructs were worded may have been open to different interpretations. For example, to the belief item ‘Parents and professionals who work with young children have equal knowledge about young children’, the statement may imply viewpoints on parents who *work* with young children, instead of parents who have young children. Likewise, with regard to the response options in Section B of the questionnaire, ‘hardly ever’, ‘sometimes’, ‘very often’ and ‘almost always’ may have been interpreted differently by the respondents. Some may have responded in the context of a daily or weekly behaviour, whilst others may have responded with reference to frequency of the particular behaviour within a specific context or environment.

The survey research may have also attracted participants of certain characteristics (e.g., educated mothers, those with internet access, children who are attending playschools), and generated a biased-sample response. Although the survey was adapted from Johnston and Wong’s (2002) and Simmons and Johnston’s (2007) studies, several survey items from these studies were excluded for this study, and new items were included to reflect the cultures examined in this thesis. In order to ensure the survey items were culturally appropriate with the populations sampled in this study, several measures recommended by Johnston and Wong (2002), and Simmons and Johnston (2007) were implemented during survey construction. These measures included engaging ‘cultural informants’ from New Zealand and Malaysia, and conducting a pilot study, and modifying certain survey constructs. As the survey was translated into Bahasa Malaysia, a native Bahasa Malaysia speaker was engaged to scrutinize

the survey wordings together with the author in order to minimize possible confusion over translated words.

However, a disadvantage in this survey research remains in the lack of use of Cronbach's alpha to measure internal consistency of survey constructs, that is, to ensure that no two constructs 'measure the same thing' (Tavakol & Dennick, 2011). In addition to generating a large response rate in the study, results were statistically analysed for differences at the stringent  $p$  value of less than .001 to increase probability of chance occurrence. The findings of this study are not meant to be generalized across populations but to be viewed as exploratory in nature. Future studies utilizing the survey tool used in this study may need to consider using internal consistency measures or revise survey constructs accordingly, with increased sample size.

**Coding.** With reference to Study Two, the observed mother-child interaction behaviours were coded according to criteria recommended by the literature (Girolametto et al., 1999; Girolametto et al., 2000; Tulviste, 2004). There were a few new codes developed specifically for this study, for example, verbal reprimands, and responses to questions, affirmations, greetings, ambiguous or unclear utterances (the latter four interaction behaviours were coded under the category 'Other Utterances'). Although all behaviours were coded in mutually exclusive categories, these newly developed codes were not found in any literature. Therefore, the findings need to be interpreted with caution, as there could have been possible overlaps with definition. A specific reference to affirmations and verbal praise was discussed in Chapter Three.

The language sample derived from the observational study included mother-child dyads that interacted in two languages. In addition to these two languages, terms of endearment (e.g., darling) and kinship terms (e.g., older sister, older brother) used in other languages, e.g., Mandarin or Tamil, were transcribed within the SALT language sample database. The

SALT program used in this study was developed specifically for English-speaking individuals, in particular, New Zealand English (Miller, Gillon & Westerweld, 2012). The coding system in itself may not have influenced the findings, as the definitions for interaction behaviours are constant across languages. However, there are concerns over SALT's calculations of mothers' and children's verbal productivity measures. The number of different words automatically generated by the SALT analysis menu may be significantly elevated and biased as two different words with identical meaning in two languages are counted as two different words in the database. Although Genesee et al. (2004) and Hakansson et al. (2003) recommended that two words with identical meaning (in both languages) are considered as *one* total vocabulary score in language measures for bilingual children, the SALT program calculates two words with identical meaning in two languages as two different words.

However, in eliciting narratives from native Spanish-speaking children who are bilingual (English and Spanish), Miller et al. (2012) made two recommendations with reference to using the SALT program. First, the narratives are to be obtained in the children's most comfortable language, and then in the other language. Second, in the event of code-switching, the child is asked to reproduce language in the target language. The authors recommended the language sample for the bilingual child consist of at least 80% of words in the child's target language. For the research in this study, mothers were asked to speak in the language that their children were most comfortable with (English or Bahasa Malaysia). However, the language samples of mothers who spoke exclusively in Bahasa Malaysia or used both Bahasa Malaysia and English with their children did not meet 80% criteria for English, since the SALT database used for the study was for English-speakers. While there is a Spanish SALT database, there is currently no SALT database created for Bahasa Malaysia speakers or bilingual English-Bahasa Malaysia speakers. As a result, the findings for verbal productivity measures, that is, number of different words, generated automatically by SALT

analysis need to be interpreted with caution. This is applicable to the findings obtained from the correlation measures as well.

**Frequency measures.** The interaction behaviour and verbal productivity variables used in this study were measured in absolute or total frequency, instead of relative/proportional frequency. Hoff-Ginsberg (1991) provided evidence that analysis of a child-directed language sample using two frequency measures (absolute and proportional) had yielded different outcomes when there were large variations in verbal output. There is an assumption that proportional frequency is a better measure than absolute frequency when considering maternal input for children's language; however, Hoff-Ginsberg argued that it has yet to be effectively determined or disentangled. Hoff-Ginsberg believed that absolute frequency provided a direct measurement of differences in verbal input children received. However, Pine (1992) pointed out the type of frequency used in measures needs to be guided by the specific aims of a particular research study. Both authors cautioned the need to account for individual variations (e.g., some mothers may talk more than others may), duration of sample size, and the need to acknowledge that an observed mother-child interaction for a given period in any clinical setting may not be representative of everyday interactions. As talkativeness (measured by number of total utterances) was calculated using absolute frequency, individual variations in maternal talkativeness output (as evidenced in scatterplot graphs in Chapter Three) would have influenced study findings. Given the exploratory nature of the study, and given that all participants' language samples in this study were cut at 15-minute duration (for analysis), the limitations for not using proportional frequency may have been mitigated. However, the findings of correlation measures between mothers' and children's verbal productivity measures need to be interpreted cautiously as well.

**Demographic factors.** This study did not account for specific differences in participants' demographic characteristics. For example, in the survey study, there were



significantly more New Zealand than Malaysian mothers who held university degrees. For the observational study, although there were differences in maternal education among the three groups of Malaysian mothers, these were not significant. Differences in maternal education were not factored in analysis; and as a result could call into questions the study findings as attributed to cultural differences between New Zealand and Malaysian mothers. This is a concern as several studies have pointed out that differences in mothers' socio-economic status (maternal education was one indicator) influenced their verbal interaction behaviours when interacting with children, thus affecting children's language development and skills (Basit, Hughes, Iqbal & Cooper, 2015; Hoff-Ginsberg, 1991; Rowe, 2008; Rodríguez et al., 2009).

However, it can be argued that the above studies compared the socio-economic status of mothers living in the same country, and not across different countries. Although the National Census agencies in both countries reported similar percentages for literacy rate and tertiary education, the Malaysian Census (2010) reported that 91% of the population had some form of formal education and 26.4% of the population had completed tertiary education (with no specific statistics for university degree holders). In contrast, the New Zealand Census (2013) reported that 79.1% of the population held formal qualifications (20% of whom have qualifications of a bachelor's or higher degrees). New Zealand is considered a developed country. Malaysia is expected to obtain a developed nation status in the year 2020. As a result, there could be differences in education systems, definitions of formal qualification or formal education within these two countries. This could be one possible reason that the demographic findings in this study (maternal education) did not reflect census reports. Differences in maternal education could have influenced the thesis findings and as such, remain a limitation for this exploratory study. Future cross-cultural studies could

account for possible differences in maternal education or explore other socio-economic factors, for example, income and occupation, by using factor analysis.

Lastly, the current findings are derived from a small sample of New Zealand and Malaysian participants residing in their respective countries. Therefore, when there is mention of specific groups of mothers reporting or demonstrating specific verbal and interaction behaviours, the reference is intended towards mothers within the sample, and does not imply generalization across all mothers residing in these two countries or elsewhere. Further to this, the correlation analysis undertaken in the study does not infer causality. Other factors, for example, mothers' verbal and interaction behaviours relative to children's age, exposure to or use of number of languages, and so forth were not considered in this study. A future experimental study that specifically delineates children's ages (e.g., just study 3-year-olds), verbal input in one vs. two languages, maternal education (with or without university degree) to study maternal input and its effect on children's language skills may help researchers understand the dynamics between culture, maternal interaction behaviours and children's language development across different cultures.

#### **4.6 DIRECTION FOR FUTURE RESEARCH**

Although specific suggestions for future research were provided within the discussion sections for both studies (Chapters Two and Three), two other proposals are made in this section.

Firstly, given that there is no SALT database for Bahasa Malaysia-speaking individuals, a future study that uses narratives to build the database in this language is recommended. This study would offer researchers an invaluable database from which language samples in Bahasa Malaysia could be analysed in detail, for example, identification of grammatical morphemes

and syntactic structures, which can aid understanding of normal and atypical language development in children.

Secondly, this thesis considered the beliefs and interaction practices (reported and observed) of mothers with typically-developing children in a previously non-sampled population. A future similar study of mothers with children with communication difficulties may be able to pinpoint specific beliefs and interaction behaviours that may be useful for clinical intervention. For example, if Malaysian mothers with typically-developing children were primarily using response control-utterances with their children, what type of interaction patterns would they use when interacting with children who have communication difficulties (matched according to developmental age)? Would culture-specific interaction patterns change to accommodate children with different developmental skills or delayed skills? In addition, would there be a difference in children's verbal productivity measures if mothers used responsive interaction patterns or issued directive-like utterances within a joint attention context (i.e. follow-in directives)? Given that Malaysian families are organized within a patriarchal and hierarchal structure, how do fathers interact with their children during playtime, and would fathers' and mothers' interaction patterns with their children be different in both New Zealand and Malaysian samples? With regard to intervention, it might be worthwhile to explore an experimental intervention study that could measure the interaction behaviours used by mothers at pre- and post- training when using parent-based programs that recommend the language-modelling utterances to increase children's communication skills (e.g., Hanen's *It Takes Two to Talk*, Pepper & Weitzman, 2004).

## **4.7 CONCLUSION**

In conclusion, the findings of this study revealed that New Zealand and Malaysian mothers have different reported beliefs and practices related to mother-child interactions,

differences that could be possibly attributed to the distinct ideologies adopted by these two cultures (i.e. individual vs. interdependence dimensions), emphasis on teaching and other factors explored in the study. A detailed analysis within the Malaysian sample revealed that mothers of Malay, Chinese and Indian ethnicities were more similar than different in both their reported and observed beliefs and practices.

Findings from the observational study revealed that most Malaysian mothers within the sample, irrespective of their ethnicities, used response-control (directive-like) utterances when interacting with their children, suggesting that mothers who interacted with their children could have had an overall teaching, rather than communication goal. There were few specific differences in interaction behaviours across ethnic groups. The interaction behaviours of Malaysian Malay and Indian mothers tended to be more alike than Malaysian Chinese mothers. Possible factors associated with mothers' beliefs, age and educational level were explored.

Correlation analysis on the Malaysian sample as a group revealed that two verbal productivity measures, that is, mothers' and children's number of different words (NDW) and mean turn length utterance in words (MLUw), were significantly and positively correlated. Maternal response control utterances were significantly and negatively correlated with children's three verbal productivity measures, that is, words per minute, NDW and MLUw. In addition, increases in maternal conversational dominance were significantly associated with decreases in all of children's verbal productivity measures (including number of total utterances). The findings of this study have implications for language intervention programs that recommend the use of language-modelling utterances to develop children's language skills. A five-point guideline to navigate belief systems when working with diverse populations was proposed in this thesis.

## REFERENCES

- Abel, S., Park, J., Tipene-Leach, D., Finau, S., & Lennan, M. (2001). Infant care practices in New Zealand: A cross-cultural qualitative study. *Social Science & Medicine*, 53, 1135-1148. doi: 10.1016/S0277-9536(00)00408-1
- Achtzener, K. (2011, 9th September). Do You Still Call People Sir or Ma'am? Stop it! Retrieved from <http://youremakingme.com/do-you-still-call-people-sir-or-maam-stop-it/>
- Ahmad, K., Ibrahim, H., Othman, B. F., & Vong, E. (2013). Addressing education of speech-language pathologists in the World Report on Disability: Development of a speech-language pathology program in Malaysia. *International Journal of Speech-Language Pathology*, 15, 37-41. doi: 10.3109/17549507.2012.757709
- Akhtar, N., Dunham, F., & Dunham, P. J. (1991). Directive interactions and early vocabulary development: The role of joint attentional focus. *Journal of Child Language*, 18, 41-49.
- Alfaro, C. (2008). Developing ideological clarity: one teacher's journey. In L. I. Bartolomé (Ed.), *Ideologies in education : Unmasking the trap of teacher neutrality* (pp. 231-250). New York: Peter Lang Publishing.
- Aneas, M. A., & Sandín, M. P. (2009). Intercultural and cross-cultural communication research: some reflections about culture and qualitative methods. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 10(1). Retrieved from <http://www.qualitative-research.net/index.php/fqs/article/view/1251/0>
- ASHA. (2010). *Cultural Competence Checklist: Personal reflection*. Retrieved from [www.asha.org/uploadedFiles/practice/multicultural/personalreflection.pdf](http://www.asha.org/uploadedFiles/practice/multicultural/personalreflection.pdf)
- ASHA. (2013). *Issues in ethics: Cultural and linguistic competence*. Retrieved from <http://www.asha.org/Practice/ethics/Cultural-and-Linguistic-Competence/>
- Baker, C. (2011). *Foundations of bilingual education and bilingualism* (5th ed.). Bristol: Multilingual Matters.
- Barnes, S., Gutfreund, M., Satterly, D., & Wells, G. (1983). Characteristics of adult speech which predict children's language development. *Journal of Child Language*, 10, 65-84.
- Basit, T. N., Hughes, A., Iqbal, Z., & Cooper, J. (2014). The influence of socio-economic status and ethnicity on speech and language development. *International Journal of Early Years Education*, 23, 115-133. doi: 10.1080/09669760.2014.973838
- Baskaran, L. (2000). Attitudes and motivations of the Asian mind towards speech and language disorders. *Asia Pacific Journal of Speech, Language and Hearing*, 5, 171-180.
- Bayat, M. (2011). Clarifying issues regarding the use of praise with young children. *Topics in Early Childhood Special Education*, 31, 121-128.
- Bell, R. Q. (1979). Parent, child, and reciprocal influences. *American Psychologist*, 34, 821-826. doi: 10.1037/0003-066X.34.10.821
- Bloom, L., Margulis, C., Tinker, E., & Fujita, N. (1996). Early conversations and word learning: Contributions from child and adult. *Child Development*, 67, 3154-3175.
- Bloom, L., Tinker, E., & Scholnick, E. K. (2001). The Intentionality Model and language acquisition: Engagement, effort, and the essential tension in development. *Monographs of the Society for Research in Child Development*, 66, 1-101.
- Bohannon, J. N., & Bonvillian, J. D. (1997). Theoretical approaches to language acquisition. In J. B. Gleason (Ed.), *The development of language* (4th ed., pp. 259-316). Needham Heights: Allyn & Bacon.

- Borchert, S., Lamm, B., Graf, F., & Knopf, M. (2013). Deferred imitation in 18-month-olds from two cultural contexts: The case of Cameroonian Nso farmer and German-middle class infants. *Infant Behavior and Development*, 36, 717-727. doi: <http://dx.doi.org/10.1016/j.infbeh.2013.08.003>
- Bornstein, M. H. (1989). Cross-cultural developmental comparisons: the case of Japanese-American infant and mother activities and interactions. What we know, what we need to know, and why we need to know. *Developmental Review*, 9, 171-204.
- Bornstein, M. H. (2002a). Parenting infants. In M. H. Bornstein (Ed.), *Handbook of parenting* (2nd ed., Vol. 1, pp. 3-43). NJ: Erlbaum: Mahwah.
- Bornstein, M. H. (2002b). Toward a multiculture, multiage, multimethod science. *Human Development*, 45, 257-263.
- Bornstein, M. H., & Cheah, C. S. L. (2006). The place of "culture and parenting" in the ecological contextual perspective on developmental science. In K. H. Rubin & O. B. Chung (Eds.), *Parenting Beliefs, Behaviours and Parent-Child Relations* (pp. 3-33). New York: Psychology Press.
- Bornstein, M. H., Tal, J., Rahn, C., Galperín, C. Z., Pêcheux, M.-G., Lamour, M., . . . Tamis-LeMonda, C. S. (1992). Functional analysis of the contents of maternal speech to infants of 5 and 13 months in four cultures: Argentina, France, Japan, and the United States. *Developmental Psychology*, 28, 593-603. doi: 10.1037/0012-1649.28.4.593
- Bornstein, M. H., Tamis-LeMonda, C. S., Tal, J., Ludemann, P., Toda, S., Rahn, C. W., . . . Vardi, D. (1992). Maternal responsiveness to infants in three societies: The United States, France, and Japan. *Child Development*, 63(4), 808-821. doi: 10.1111/j.1467-8624.1992.tb01663.x
- Bornstein, M. H., Toda, S., Azuma, H., Tamis-LeMonda, C., & Ogino, M. (1990). Mother and infant activity and interaction in Japan and in the United States: II. A comparative microanalysis of naturalistic exchanges focused on the organisation of infant attention. *International Journal of Behavioural Development*, 13, 289-308.
- Boynton, P. M., & Greenhalgh, T. (2004). Selecting, designing and developing your questionnaire. *British Medical Journal*, 328, 1312-1315.
- Broen, P. A. (1972). The verbal environment of the language-learning child. *Monographs: A Publication of the American Speech and Hearing Association*, 17, 1-110.
- Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, 22(6), 723-742. doi: 10.1037/0012-1649.22.6.723
- Bruner, J. (1981). The social context of language acquisition. *Language & Communication* 1, 155-178.
- Burns, A., & Radford, J. (2008). Parent-child interaction in Nigerian families: conversation analysis, context and culture. *Child Language Teaching and Therapy*, 24, 193-209.
- Callanan, M. A., Akhtar, N., & Sussman, L. (2014). Learning words from labeling and directive speech. *First Language*, 34, 450-461.
- Chan, S., & Chen, D. (2011). Families with Asian roots. In E. Lynch, W & M. Hanson, J (Eds.), *Developing cross-cultural competence: A guide for working with children and their families* (4th ed., pp. 234-311). Baltimore: Paul Brookes.
- Chao, R. K. (1994). Beyond parental control and authoritarian parenting style: Understanding Chinese parenting through the cultural notion of training. *Child Development*, 65, 1111-1119.
- Chao, R. K. (1996). Chinese and European American mothers' beliefs about the role of parenting in children's school success. *Journal of Cross-Cultural Psychology*, 27, 403-423.

- Cheah, C. S. L., & Chirkov, V. (2008). Parents' personal and cultural beliefs regarding young children: A cross-cultural study of Aboriginal and Euro-Canadian mothers. *Journal of Cross-Cultural Psychology*, 39, 402-423.
- Cheah, C. S. L., Leung, C. Y. Y., Tahseen, M., & Schultz, D. (2009). Authoritative parenting among immigrant Chinese mothers of preschoolers. *Journal of Family Psychology*, 23, 311-320. doi:10.1037/a0015076
- Cheah, C. S. L., & Rubin, K. H. (2003). European American and Mainland Chinese mothers' socialization beliefs regarding preschoolers' social skills. *Parenting: Science & Practice*, 3, 1-21.
- Check, J., & Schutt, R. K. (2012). *Research methods in education*. Boston: Sage Publications.
- Chen, Y.-J., & McCollum, J. (2000). Taiwanese mothers' perceptions of the relationship between interactions with their infants and the development of social competence. *Early Child Development and Care*, 162, 25-40. doi: 10.1080/0300443001620103
- Cheng, L.-r. L. (1990). The identification of communicative disorders in Asian-Pacific Students. *Journal of Childhood Communication Disorders*, 13, 113-110.
- Chew, K. S., Tan, T. W., & Ooi, Y. T. (2011). Influence of Chinese cultural health beliefs among Malaysian Chinese in a suburban population: a survey. *Singapore Medical Journal*, 52, 252-256.
- Childress, D. C. (2011). Play behaviors of parents and their young children with disabilities. *Topics in Early Childhood Special Education*, 31(2), 112-120. doi: 10.1177/0271121410390526
- Cleave, P. L., Becker, S. D., Curran, M. K., Van Horne, A. J. O., & Fey, M. E. (2015). The Efficacy of recasts in language intervention: A systematic review and meta-analysis. *American Journal of Speech-Language Pathology*, 24, 237-255. doi: 10.1044/2015\_AJSLP-14-0105
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Hillsdale, N.J.: Erlbaum Associates.
- Coluzzi, P. (2011). Modernity and globalisation: Is the presence of English and of cultural products in English a sign of linguistic and cultural imperialism? Results of a study conducted in Brunei Darussalam and Malaysia. *Journal of Multilingual and Multicultural Development*, 33, 117-131. doi: 10.1080/01434632.2011.640401
- Conti-Ramsden, G. (1990). Maternal recasts and other contingent replies to language-impaired children. *Journal of Speech and Hearing Disorders*, 55, 262-274.
- Corte, M. D., Benedict, H., & Klein, D. (1983). The relationship of pragmatic dimensions of mothers' speech to the referential-expressive distinction. *Journal of Child Language*, 10, 35-43.
- Crago, M. (1990). Development of communicative competence in Inuit children: Implications for speech-language pathology. *Journal of Childhood Communication Disorders*, 13, 73-83.
- Crago, M. (1992). Ethnography and language socialization: A cross-cultural perspective. *Topics in Language Disorders*, 12(3), 28-39.
- Crespo, C., Kielpikowski, M., Pryor, J., & Jose, P. E. (2011). Family rituals in New Zealand families: Links to family cohesion and adolescents' well-being. *Journal of Family Psychology*, 25, 184-193. doi: 10.1037/a0023113
- Cress, C. J., Moskal, L., & Hoffmann, A. (2008). Parent directiveness in free play with young children with physical impairments. *Communication Disorders Quarterly*, 29, 99-108. doi: 10.1177/1525740108315257

- Cristofaro, T. N., & Tamis-LeMonda, C. S. (2012). Mother-child conversations at 36 months and at pre-kindergarten: Relations to children's school readiness. *Journal of Early Childhood Literacy*, 12, 68-97. doi: 10.1177/1468798411416879
- Cross, T. G., & Morris, J. E. (1980). Addressing infants, one-year-olds and two-year-olds linguistic feedback and maternal speech: comparisons of mothers. *First Language*, 1, 98-121.
- Dillman, D. (2000). *Mail and internet surveys: The tailored design method*. (2nd ed.). New York: John Wiley & Sons.
- Dixon, S., Tronick, E., Keefer, C., & Brazelton, B., T. (1981). Mother-infant interaction among the Gusii of Kenya. In T. Field, M., A. Sostek, M, P. Vietze & H. Leiderman, P. (Eds.), *Culture and early interactions* (pp. 149-168). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- DiYanni, C. J., Corriveau, K. H., Kurkul, K., Nasrini, J., & Nini, D. (2015). The role of consensus and culture in children's imitation of inefficient actions. *Journal of Experimental Child Psychology*, 137, 99-110. doi: <http://dx.doi.org/10.1016/j.jecp.2015.04.004>
- Facchini, F., & Melki, M. (2011, April 7 – 10, 2011). *Ideology and cultural change: A theoretical approach*. Paper presented at the Seminar SEPIO June 21, MSE (Paris 1, France) and Association for the Study of Religion, Economics & Culture, ASREC Annual Meeting, Hyatt Regency, Crystal City (Washington DC).
- Faruqi, S. S. (2011, 24-25 May 2011). *The Constitution of a muslim majority state: The example of Malaysia*. Paper presented at the Constitution-making Forum: A Government of Sudan Consultation, Khartum, Sudan.
- Fenson, L., Marchman, V. A., Thal, D., Dale, P. S., Reznick, J. S., & Bates, E. (2007). *MacArthur-Bates Communicative Development Inventories : User's guide and technical manual* (2nd ed.). Baltimore: Paul H. Brookes.
- Field, A. P. (2009). *Discovering statistics using SPSS: And sex and drugs and rock 'n' roll* (3rd ed.). London: Sage Publications.
- Fink, A. (2006). *How to conduct online surveys. A step by step guide* (3rd ed.). Thousand Oaks: Sage Publications.
- Foote, L., Smith, J., & Ellis, F. (2004). The impact of teachers' beliefs on the literacy experiences of young children: A New Zealand perspective. *Early Years: An International Journal of Research and Development*, 24, 135-147. doi: 10.1080/0957514032000732993
- Forman, D. R., & Kochanska, G. (2001). Viewing imitation as child responsiveness: A link between teaching and discipline domains of socialization. *Developmental Psychology*, 37, 198-206. doi: 10.1037/0012-1649.37.2.198
- Fung, F., & Roseberry-McKibbin, C. (1999). Service delivery considerations in working with clients from Cantonese-speaking backgrounds. *American Journal of Speech-Language Pathology*, 8, 309-318.
- Gavin, W. J., & Giles, L. (1996). Sample size effects on temporal reliability of language sample measures of preschool children. *Journal of Speech, Language, and Hearing Research*, 39, 1258-1262. doi: 10.1044/jshr.3906.1258
- Genesee, F. (2015). Myths about early childhood bilingualism. *Canadian Psychology*, 56, 6-15.
- Genesee, F., Paradis, J., & Crago, M. B. (2004). *Dual language development and disorders: A handbook on bilingualism and second language learning*. Baltimore, MD: Paul H. Brookes.
- Girolametto, L., Bonifacio, S., Visini, C., Weitzman, E., Zocconi, E., & Pearce, P. S. (2002). Mother-child interactions in Canada and Italy: Linguistic responsiveness to late-



- talking toddlers. *International Journal of Language & Communication Disorders*, 37, 153-171.
- Girolametto, L., & Weitzman, E. (2002). Responsiveness of child care providers in interactions with toddlers and preschoolers. *Language, Speech, and Hearing Services in Schools*, 33, 268-281.
- Girolametto, L., Weitzman, E., van Lieshout, R., & Duff, D. (2000). Directiveness in teachers' language input to toddlers and preschoolers in day care. *Journal of Speech, Language & Hearing Research*, 43, 1101-1114.
- Girolametto, L., Weitzman, E., Wiigs, M., & Pearce, P. S. (1999). The relationship between maternal language measures and language development in toddlers with expressive vocabulary delays. *American Journal of Speech-Language Pathology*, 8, 364-374.
- Gomez, R., & Suhaimi, A. F. (2014). Malaysian parent ratings of the parental acceptance-rejection questionnaire–short form: Factor structure and invariance across girls and boys and mothers and fathers. *Parenting: Science and Practice*, 14, 195-214.
- Goode, T., D., Jones, W., & Jackson, V. (2011). Families with African American roots. In E. Lynch, W & M. Hanson, J (Eds.), *Developing cross-cultural competence: A guide for working with children and their families* (pp. 140-189). Baltimore: Paul Brookes.
- Goroh, E. (2011). Malaysia: IWGIA – THE INDIGENOUS WORLD.
- Gridley, N., Hutchings, J., & Baker-Henningham, H. (2015). The Incredible Years Parent–Toddler Programme and parental language: A randomised controlled trial. *Child: Care, Health & Development*, 41, 103-111.
- Groves, R. M. (1989). *Survey errors and costs*. New York: John Wiley & Sons.
- Guo, L.-Y., & Eisenberg, S. (2015). Sample length affects the reliability of language sample measures in three-year-olds: Evidence from parent-elicited conversational samples. *Language, Speech, and Hearing Services in Schools*. doi: 10.1044/2015\_LSHSS-14-0052
- Guralnick, M. J., & Neville, B. (1997). Designing early intervention programs to promote children's social competence. In M. J. Guralnick (Ed.), *The effectiveness of early intervention* (pp. 579-610). Baltimore: Brookes. Retrieved from [http://depts.washington.edu/chdd/guralnick/pdfs/Guralnick\\_Neville-Designing\\_Early\\_Intervention\\_TheEffectiveness-1997.pdf](http://depts.washington.edu/chdd/guralnick/pdfs/Guralnick_Neville-Designing_Early_Intervention_TheEffectiveness-1997.pdf).
- Hakansson, G., Salameh, E.-K., & Nettelbladt, U. (2003). Measuring language development in bilingual children: Swedish-Arabic children with and without language impairment. *Linguistics*, 41, 255-288.
- Hammer, C. S., & Weiss, A. L. (2000). African American mothers' views of their language development and language -learning environment. *American Journal of Speech-Language Pathology*, 9, 126-140.
- Hancock, I. F. (1975). Malacca Creole Portuguese: Asian, African or European? *Anthropological Linguistics*, 17, 211-236. doi: 10.2307/30027570
- Hanson, M., J. (2011). Families with Anglo-European roots. In E. Lynch, W & M. Hanson, J (Eds.), *Developing cross-cultural competence: A guide for working with children and their families* (4th ed., pp. 80-109). Baltimore: Paul Brookes.
- Harkness, S., & Super, C. M. (2006). Themes and variations: Parental ethnotheories in Western cultures. In K. H. Rubin & O. B. Chung (Eds.), *Parenting beliefs, behaviours, and parent-child relations* (pp. 61-79). New York: Psychology Press.
- Hart, B. (2004). What toddlers talk about. *First Language*, 25, 91-106. doi: 10.1177/0142723704044634.
- Hart, B., & Risley, T. R. (1992). American parenting of language-learning children: persisting differences in family-child interactions observed in natural home environments. *Developmental Psychology*, 28, 1096-1105.

- Hart, B., & Risley, T. R. (1995). *Meaningful differences in everyday experiences of young American children*. Baltimore: P.H. Brookes.
- Harwood, R., L., Schoelmerich, A., Schulze, P., & Gonzalez, Z. (1999). Cultural differences in maternal beliefs and behaviors: A study of middle-class Anglo and Puerto Rican mother-infant pairs in four everyday situations. *Child Development*, 70, 1005-1016.
- Heilmann, J., Miller, J. F., Iglesias, A., Fabiano-Smith, L., Nockerts, A., & Andriacchi, K. D. (2008). *Narrative transcription accuracy and reliability in two languages*. *Topics in Language Disorders*, 28, 178-188.
- Heilmann, J., Nockerts, A., & Miller, J. F. (2010). Language sampling: Does the length of the transcript matter? *Language Speech and Hearing Services in School*, 41, 393-404. doi: 10.1044/0161-1461(2009/09-0023)
- Hemmeter, M. L., & Kaiser, A. P. (1994). Enhanced Milieu Teaching: Effects of parent-implemented language intervention. *Journal of Early Intervention*, 18, 269-289.
- Hewitt, B., & Maloney, C. (2010). Malaysian parents' ideal and actual perceptions of preschool education. *International Journal of Early Years Education*, 8, 83-92. doi: 10.1080/096697600111761
- Hewitt, L. E., Hammer, C. S., Yont, K. M., & Tomblin, J. B. (2005). Language sampling for kindergarten children with and without SLI: mean length of utterance, IPSYN, and NDW. *Journal of Communication Disorders*, 38, 197-213. doi: <http://dx.doi.org/10.1016/j.jcomdis.2004.10.002>
- Hirsh-Pasek, K., Adamson, L. B., Bakeman, R., Owen, M. T., Golinkoff, R. M., Pace, A., . . . Suma, K. (2015). The contribution of early communication quality to low-income children's language success. *Psychological Science*, 26, 1071-1083.
- Ho, D. Y., & Kang, T. K. (1984). Intergenerational comparisons of child-rearing attitudes and practices in Hong Kong. *Developmental Psychology*, 20, 1004-1016. doi: 10.1037/0012-1649.20.6.1004
- Hoff-Ginsberg, E. (1991). Mother-child conversation in different social classes and communicative settings. *Child Development*, 62, 782-796. doi: 10.1111/1467-8624.ep9109162253
- Hoff-Ginsberg, E. (1998). The relation of birth order and socioeconomic status to children's language experience and language development. *Applied Psycholinguistics*, 19, 603-629.
- Hoff, E., & Naigles, L. (2002). How children use input to acquire a lexicon? *Child Development*, 73, 418-433.
- Hoff, E., & Tian, C. (2005). Socioeconomic status and cultural influences on language. [doi: 10.1016]. *Journal of Communication Disorders*, 38, 271-278.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviours, institutions, and organizations across nations* (2nd ed.). Thousand Oaks, California: Sage Publications.
- Hossain, Z. (2014). Parental beliefs and fathers' and mothers' roles in Malaysian families. In H. Selin (Ed.), *Parenting across cultures: Child rearing, motherhood and fatherhood in non-Western cultures, sciences across cultures: The history of non-Western Science* (pp. 77-90). New York: Springer.
- Hossain, Z., Roopnarine, J. L., Masud, J., Muhamed, A. A.-H., Baharudin, R., Abdullah, R., & Juhari, R. (2005). Mothers' and fathers' childcare involvement with young children in rural families in Malaysia. *International Journal of Psychology*, 40, 385-394. doi: 10.1080/00207590444000294
- Howe, K. R. (2008). *The quest for origins: Who discovered and settled New Zealand and the Pacific Islands?* New Zealand: Penguin Books.

- Howes, C., Guerra, A. W., & Zucker, E. (2007). Cultural communities and parenting in Mexican-heritage families. *Parenting: Science and Practice*, 7, 235—270.
- Hutchins, T. L., Brannick, M., Bryant, J., B., & Silliman, E., R. (2005). Methods for controlling amount of talk: Difficulties, considerations and recommendations. *First Language*, 25, 347-363. doi: 10.1177/0142723705056376
- Huttenlocher, J., Haight, W., Bryk, A., Seltzer, M., & Lyons, T. (1991). Early vocabulary growth: relation to language input and gender. *Developmental Psychology*, 27, 236-248.
- Huttenlocher, J., Vasilyeva, M., Cymerman, E., & Levine, S. (2002). Language input and child syntax. *Cognitive Psychology*, 45, 337-374. doi: [http://dx.doi.org/10.1016/S0010-0285\(02\)00500-5](http://dx.doi.org/10.1016/S0010-0285(02)00500-5)
- Huttenlocher, J., Waterfall, H., Vasilyeva, M., Vevea, J., & Hedges, L. V. (2010). Sources of variability in children's language growth. *Cognitive Psychology*, 61, 343-365. doi: <http://dx.doi.org/10.1016/j.cogpsych.2010.08.002>
- Hwa-Froelich, D. A., & Westby, C. E. (2003). Frameworks of education: Perspectives of Southeast Asian parents and Head Start staff. *Language, Speech and Hearing Services in School*, 34, 299-319. doi: 10.1044/0161-1461(2003/025)
- International Labour Office Geneva. (2012). *International Standard Classification of Occupations: Structure, group definitions and correspondence tables IACO-08*. Retrieved from <http://www.ilo.org/public/english/bureau/stat/isco/isco08/>
- Issac, R., Annie, I. K., & Prashanth, H. R. (2014). Parenting in India. In H. Selin (Ed.), *Parenting across cultures: Child rearing, motherhood and fatherhood in non-Western cultures, sciences across cultures: The history of non-Western Science* (Vol. 7, pp. 39-45). New York: Springer.
- Issel, L. M. (2014). *Health program planning and evaluation* (3rd ed.). Burlington: Jones & Bartlett Learning.
- Jacob, N. (2011). Families with South Asian roots. In E. Lynch, W & M. Hanson, J (Eds.), *Developing cross-cultural competence: A guide for working with children and their families* (4th ed., pp. 437-462). Baltimore: Paul Brooks.
- Janssens, H., Verkuyten, M., & Khan, A. (2015). Perceived social structural relations and group stereotypes: A test of the stereotype content model in Malaysia. *Asian Journal of Social Psychology*, 18, 52-61. doi: 10.1111/ajsp.12077
- Johnston, J. R., & Wong, M.-Y. A. (2002). Cultural differences in beliefs and practices concerning talk to children. *Journal Speech Language and Hearing Research*, 45, 916-926. doi: 10.1044/1092-4388(2002/074)
- Jonk, L. B., & Enns, C. (2009). Using culturally appropriate methodology to explore Dene mothers' views on language facilitation. *Canadian Journal of Speech-Language Pathology and Audiology*, 33(1), 34-41.
- Jose, P. E., Huntsinger, C. S., Huntsinger, P., R., & Liaw, F.-R. (2000). Parental values and practices relevant to young children's social development in Taiwan and the United States. *Journal of Cross-Cultural Psychology*, 31, 677-702.
- Junefelt, K., & Tulviste, T. (1997). Regulation and praise in American, Estonian, and Swedish mother-child interaction. *Mind, Culture, and Activity*, 4, 24-33. doi: 10.1207/s15327884mca0401\_3
- Kagitcibasi, C. (2005). Autonomy and relatedness in cultural context: Implications for self and family. *Journal of Cross-Cultural Psychology*, 36, 403-422.
- Kaiser, A. P., & Hancock, T. B. (2003). Teaching parents new skills to support their young children's development. *Infants & Young Children*, 16, 9-21.

- Kaiser, A. P., Hemmeter, M. L., Ostrosky, M. M., Fischer, R., Yoder, P., & Keefer, M. (1996). The effects of teaching parents to use Responsive Interaction Strategies. *Topics in Early Childhood Special Education*, 16, 375-406.
- Kakar, S., & Kakar, K. (2007). *The Indians: Potrait of a people*. New Delhi, India: Penguin Group.
- Kalia, V. (2007). Assessing the role of book reading practices in Indian bilingual children's English language and literacy development. *Early Childhood Education Journal*, 35, 149-153.
- Keats, D. M. (2000). Cross-cultural studies in child development in Asian contexts. *Cross-Cultural Research*, 34, 339-350.
- Kemp, K., & Klee, T. (1997). Clinical language sampling practices: Results of a survey of speech-language pathologists in the United States. *Child Language Teaching & Therapy*, 13, 161-176.
- Kim, H. U. (2012). Autism across cultures: Rethinking autism. *Disability & Society*, 27, 535-545. doi: 10.1080/09687599.2012.659463
- Kita, S. (2009). Cross-cultural variation of speech accompanying gesture: A review. *Language and Cognitive Processes*, 24, 145-167. doi: 10.1080/01690960802586188
- Klee, T. (1992a). Developmental and diagnostic characteristics of quantitative measures of children's language production. *Topics in Language Disorders*, 12, 28-41.
- Klee, T. (1992b). *Measuring Children's Conversational Language*. In S. F. Warren & J. Reichle (Eds.), *Causes and Effects in Communication and Language Intervention* (Vol. 1, pp. 315-330). Baltimore: Paul H. Brookes.
- Klee, T. (2010). *Transcription manual based on modified SALT transcription format*. Christchurch, New Zealand.
- Kohnert, K., Yim, D., Nett, K., Kan, P. F., & Duran, L. (2005). Intervention with linguistically diverse preschool children: A focus on developing home language(s). *Language, Speech, and Hearing Services in Schools*, 36, 251-263. doi: 10.1044/0161-1461(2005/025)
- Kokkinaki, T., & Vasdekis, V. G. S. (2003). A cross-cultural study on early vocal imitative phenomena in different relationships. *Journal of Reproductive and Infant Psychology*, 21, 85-101. doi: 10.1080/0264683031000124055
- Kummerer, S. E., & Lopez-Reyna, N. A. (2006). The role of Mexican immigrant mothers' beliefs on parental involvement in speech-language therapy. *Communication Disorders Quarterly*, 27, 83-94.
- Laderman, C. (1996). The poetics of healing in Malay Shamanistic performances. In C. Laderman & M. Roseman (Eds.), *The performance of healing*. New York: Routledge.
- Laing, S. P., & Kamhi, A. (2003). Alternative assessment of language and literacy in culturally and linguistically diverse populations. *Language Speech and Hearing Service in Schools*, 34, 44-55. doi: 10.1044/0161-1461(2003/005)
- Lamm, B., Gudi, H., Freitag, C., Teubert, M., Graf, F., Fassbender, I., . . . Keller, H. (2014). Mother-infant interactions at home and in a laboratory setting: A comparative analysis in two cultural contexts. *Journal of Cross-Cultural Psychology*. doi: 10.1177/0022022114532357
- Lasky, E. Z., & Klopp, K. (1982). Parent-child interactions in normal and language-disordered children. *Journal of Speech and Hearing Disorders*, 47, 7-18.
- Law, J. (2000). Factors affecting language development in West African children: A pilot study using a qualitative methodology. *Child: Care, Health and Development*, 26, 289-308. doi: 10.1046/j.1365-2214.2000.00147

- Law, J., & Roy, P. (2008). Parental report of infant language skills: A review of developmental and application of communicative development inventories. *Child and Adolescent Mental Health*, 13, 198-206.
- Lee, S. H., & Lee, L. W. (2015). Promoting snack time interactions of children with autism in a Malaysian preschool. *Topics in Early Childhood Special Education*, 35, 89-101.
- Leech, K. A., Salo, V. C., Rowe, M. L., & Cabrera, N. J. (2013). Father input and child vocabulary development: The importance of Wh-questions and clarification requests. *Seminars in Speech and Language*, 34, 249-259.
- Lefkowitz, E. S., Kahlbaugh, P. E., & Sigman, M. D. (1996). Turn taking in mother-adolescent about sexuality and conflict. *Journal of Youth and Adolescence*, 25, 307-321.
- Lewis, M. P., Simons, G. F., & Fening, C. D. (2015). Languages of Malaysia: An Ethnologue Country Report. In M. P. Lewis, G. F. Simons & C. D. Fening (Eds.), *Ethnologue: Languages of the World* (18th ed.). Dallas, Texas: SIL International.
- Lian, C. H. T., & Abdullah, S. (2001). The education and practice of speech-language pathologists in Malaysia. *American Journal of Speech-Language Pathology*, 10, 3-9.
- Lieven, E. V. M. (1994). Crosslinguistic and crosscultural aspects of language addressed to children. In C. C. Gallaway & B. J. Richards (Eds.), *Input and interaction in language acquisition* (pp. 57-73). Cambridge: Cambridge University Press.
- Londhe, R. (2015). Acculturation of Asian Indian parents: relationship with parent and child characteristics. *Early Child Development and Care*, 185, 528-537.
- Low, H. M., Nicholas, H., & Wales, R. (2010). A sociolinguistic profile of 100 mothers from middle to upper-middle socioeconomic backgrounds in Penang-Chinese community: What languages do they speak at home with their children? *Journal of Multilingual and Multicultural Development*, 31, 569-584. doi: <http://dx.doi.org/10.1080/01434632.2010.527342>
- Luo, R., Tamis-LeMonda, C. S., & Song, L. (2013). Chinese parents' goals and practices in early childhood. *Early Childhood Research Quarterly*, 28, 843-857.
- MacDonald, J. D., & Carroll, J. Y. (1992). Communicating with young children: an ecological model for clinicians, parents, and collaborative professionals. *American Journal of Speech-Language Pathology*, 1, 39-48.
- MacLeod, A. A. N., Fabiano-Smith, L., Boegner-Pagé, S., & Fontollet, S. (2012). Simultaneous bilingual language acquisition: The role of parental input on receptive vocabulary development. *Child Language Teaching & Therapy*, 29, 131-142. doi: 10.1177/0265659012466862
- Mahoney, G., & Neville-Smith, A. (1996). The effects of directive communications on children's interactive engagement: Implications for language intervention. *Topics in Early Childhood Special Education*, 16, 236-250.
- Mahoney, G., & Powell, A. (1988). Modifying parent-child interaction: enhancing the development of handicapped children. *The Journal of Special Education*, 22, 82-96. doi: 10.1177/002246698802200110
- Majorano, M., & Lavelli, M. (2014). Maternal input to children with specific language impairment during shared book reading: Is mothers' language in tune with their children's production? *International Journal of Language and Communication Disorders*, 49, 204-214. doi: 10.1111/1460-6984.12062
- Malaysia Census. (2010) Retrieved from [http://www.statistics.gov.my/portal/index.php?option=com\\_content&view=article&id=472&Itemid=156&lang=en](http://www.statistics.gov.my/portal/index.php?option=com_content&view=article&id=472&Itemid=156&lang=en)
- Manolson, A. (1992). *It takes two to talk: A parent's guide to helping children communicate*. Toronto: The Hanen Centre.



- Marfo, K. (1990). Maternal directiveness in interactions with mentally handicapped children: An analytical commentary. *Journal of Child Psychology and Psychiatry*, 31, 531-549. doi: 10.1111/j.1469-7610.1990.tb00796.
- Marfo, K. (1992). Correlates of maternal directiveness with children who are developmentally delayed. *American Journal of Orthopsychiatry*, 62, 219-233. doi: 10.1037/h0079334
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224-253. doi: 10.1037/0033-295X.98.2.224
- Masur, E. F., Flynn, V., & Eichorst, D. L. (2005). Maternal responsive and directive behaviours and utterances as predictors of children's lexical development. *Journal of Child Language*, 32, 63-63-91.
- Matos, M., Torres, R., Santiago, R., Jurado, M., & Rodríguez, I. (2006). Adaptation of parent-child interaction therapy for Puerto Rican families: A preliminary study. *Family Process*, 45, 205-222.
- Matsumoto, D. (2006). Culture and cultural worldviews: Do verbal descriptions about culture reflect anything other than verbal descriptions of culture? *Culture & Psychology*, 12, 33-62. doi: 10.1177/1354067x06061592
- Matsumoto, D., & Yoo, S. H. (2006). Toward a new generation of cross-cultural research. *Perspectives on Psychological Science*, 1, 234-250.
- Matychuk, P. (2005). The role of child-directed speech in language acquisition: a case study. *Language Sciences*, 27, 301-379.
- McCathren, R. B., Yoder, P. J., & Warren, S. F. (1995). The role of directives in early language intervention. *Journal of Early Intervention*, 19, 91-101.
- McCollum, J. A., Ree, Y., & Chen, Y. (2000). Interpreting parent-infant interactions: cross-cultural lessons. *Infants & Young Children: An Interdisciplinary Journal of Special Care Practices*, 12, 22-33.
- McDonnell, S. A., Friel-Patti, S., & Rollins, P. R. (2003). Patterns of change in maternal-child discourse behaviors across repeated storybook readings. *Applied Psycholinguistics*, 24, 323-341.
- McHale, J. P., Dinh, K., T., & Rao, N. (2014). Understanding coparenting and family systems among East and Southeast Asian-heritage families. In H. Selin (Ed.), *Parenting across cultures: Child rearing, motherhood and fatherhood in non-Western cultures, sciences across cultures: The history of non-Western Science* (Vol. 7, pp. 163-173). New York: Springer.
- McNeill, B., & Kirk, C. (2014). Theoretical beliefs and instructional practices used for teaching spelling in elementary classrooms. *Reading and Writing*, 27, 535-554. doi: 10.1007/s11145-013-9457-0
- Mennen, I., & Stansfield, J. (2006). Speech and language therapy service delivery for bilingual children: a survey of three cities in Great Britain. *International Journal of Language & Communication Disorders*, 41, 635-652.
- Mestechkina, T., Son, N. D., & Shin, J. Y. (2014). Parenting in Vietnam. In H. Selin (Ed.), *Parenting across cultures: Child rearing, motherhood and fatherhood in non-Western cultures, sciences across cultures: The history of non-Western Science* (Vol. 7, pp. 47-57). New York: Springer.
- Miller, J., & Chapman, R. (1981). The relationship between age and mean length of utterance in morphemes. *Journal of Speech & Hearing Research*, 24, 154-161.
- Miller, J., Gillon, G., & Westerveld, M. (2012). Systematic Analysis of Language Transcripts (SALT), New Zealand Version 2012 [Computer Software] (Version 2012.2.0): SALT Software, LLC.

- Miller, J., & Klee, T. (1995). Computational approaches to the analysis of language impairments. In P. Fletcher & B. MacWhinney (Eds.), *The handbook of child language* (pp. 545-572). Oxford: Blackwell.
- Miller, J. F., Andriacchi, K., Nockerts, A., Westerveld, M., & Gillon, G. (2012). *Assessing language production using SALT software New Zealand version*. Middleton, WI: SALT Software, LLC.
- Mills, R. S. L., & Rubin, K. H. (1992). A longitudinal study of maternal beliefs about children's social behaviours. *Merrill-Palmer Quarterly*, 38, 494-512. doi: 10.2307/23087324
- Milner, A. (2003). Who created Malaysia's plural society? *The Malaysian Branch of the Royal Asiatic Society*, 76, 1-24.
- Ministry of Education, M. (2014). *Quick Facts 2014: Malaysia Educational Statistics*. Putrajaya, Malaysia: Educational Data Sector Retrieved from <http://emisportal.moe.gov.my>.
- Mistry, J., & Wu, J. (2010). Navigating Cultural Worlds and Negotiating Identities: A Conceptual Model. *Human Development*, 53, 5-5-25. doi: 10.1159/000268136
- Mokuau, N., & Tauili'ili, P. (2011). Families with native Hawaiian and Samoan roots. In E. Lynch, W & M. Hanson, J (Eds.), *Developing cross-cultural competence: A guide for working with children and their families* (4th ed., pp. 365-391). Baltimore: Paul Brookes.
- Morgan, F., & Tan, B. K. (2011). Rehabilitation for children with cerebral palsy in rural Cambodia: parental perceptions of family-centred practices. *Child: Care, Health and Development*, 37, 161-167. doi: 10.1111/j.1365-2214.2010.01170.x
- Mullatti, L. (1995). Families in India: Beliefs and realities. *Journal of Comparative Family Studies*, 26, 11-25.
- Murray, A. D., & Hornbaker, A. V. (1997). Maternal directive and facilitative interaction styles: Associations with language and cognitive development of low risk and high risk toddlers. *Development and Psychopathology*, 9, 507-516.
- Nayar, S. (2011). Settling in New Zealand: the well-being of Indian immigrant women as shaped by their children. *Diversity in Health & Care*, 8, 93-101.
- Nelson, K. (1973). Structure and strategy in learning to talk. *Monographs of the Society for Research in Child Development*, 38, 1-135.
- Newport, E., Gleitman, H., & Gleitman, L. (1977). Mother, I'd rather do it myself: Some effects and non-effects of maternal speech style. In C. E. Snow & C. A. Ferguson (Eds.), *Talking to children: Language input and acquisition* (pp. 109-149). Cambridge: Cambridge University Press.
- New Zealand Census. (2013). *Statistics New Zealand*. Retrieved from <http://www.stats.govt.nz/Census/2013-census/profile-and-summary-reports/quickstats-about-national-highlights/cultural-diversity.aspx>
- Ng, F. F.-Y., Pomerant, E. M., & Lam, S.-f. L. (2013). Mothers' beliefs about children's learning in Hong Kong and the United States: Implications for mothers' child-based worth. *International Journal of Behavioral Development*, 37, 387-394. doi: 10.1177/0165025413483393
- Ng, K. S. (1998). Family therapy in Malaysia: An update. *Contemporary Family Therapy*, 20, 37-45. doi: 10.1023/A:1025036600703
- Nielsen, M., Mushin, I., Tomaselli, K., & Whiten, A. (2014). Where culture takes hold: "overimitation" and its flexible deployment in Western, Aboriginal, and Bushmen children. *Child Development*, 85, 2169-2184. doi: 10.1111/cdev.12265
- Noor, N., M., & Leong, C.-H. (2013). Multiculturalism in Malaysia and Singapore: Contesting models. *International Journal of Intercultural Relations*, 37, 714-726.

- Ochs, E. (1982). Talking to children in Western Samoa. *Language in Society*, 11, 77-104. doi: 10.2307/4167292
- Omu, O., & Reynolds, F. (2012). Health professionals' perceptions of cultural influences on stroke experiences and rehabilitation in Kuwait. *Disability and Rehabilitation*, 34, 119-127. doi: 10.3109/09638288.2011.591883
- Ong, A. (1990). State versus Islam: Malay families, women's bodies, and the body politic in Malaysia. *American Ethnologist*, 17, 258-276. doi: 10.1525/ae.1990.17.2.02a00040
- Ooi, C. C. W., & Wong, A. M. Y. (2012). Assessing bilingual Chinese-English young children in Malaysia using language sample measures. *International Journal of Speech-Language Pathology*, 14, 499-508. doi: 10.3109/17549507.2012.712159
- Othman, B. F. (2010). *Parent-professional relationships in early intervention for children with hearing impairment: The Malaysian experience (Unpublished doctoral dissertation)*. The University of Melbourne, Melbourne, Australia.
- Palmer, F. R. (1984). *Grammar* (2nd ed.). London: Penguin.
- Pampaloni, F., Reynaud, E. G., & Stelzer, E. H. K. (2007). The third dimension bridges the gap between cell culture and live tissue. [10.1038/nrm2236]. *Nat Rev Mol Cell Biol*, 8, 839-845.
- Pan, B. A., Rowe, M. L., Spier, E., & Tamis-LeMonda, C. (2004). Measuring productive vocabulary of toddlers in low income families: Concurrent and predictive validity of three sources of data. *Journal of Child Language*, 31, 587-608.
- Pancsofar, N., & Vernon-Feagans, L. (2006). Mother and father language input to young children: Contributions to later language development. *Journal of Applied Developmental Psychology*, 27, 571-587. doi: <http://dx.doi.org/10.1016/j.appdev.2006.08.003>
- Pappas, N. W., Mcleod, S., Mcallister, L., & Mckinnon, D., H. (2008). Parental involvement in speech intervention: A national survey. *Clinical Linguistics & Phonetics*, 22, 335-344.
- Parker, M. D., & Brorson, K. (2005). A comparative study between mean length of utterance in morphemes (MLUm) and mean length of utterance. *First Language*, 25, 365-376. doi: 10.1177/0142723705059114
- Patterson, J., L. (2004). Comparing bilingual and monolingual toddlers' expressive vocabulary size: Revisiting Rescorla and Achenbach (2002). *Journal of Speech, Language, and Hearing Research*, 47, 1213-1217.
- Peltier, S. (2011). Providing culturally sensitive and linguistically appropriate services: An insider construct. *Canadian Journal of Speech-Language Pathology & Audiology*, 35, 126-134.
- Pepper, J., & Weitzman, E. (2004). *It Takes Two to Talk: A Practical guide for parents of children with language delays*. Toronto: The Hanen Centre.
- Phoon, H. S., MacLagan, M., & Abdullah, A. C. (2015). Acquisition of consonant clusters and acceptable variants in Chinese-influenced Malaysian English speaking children. *American Journal of Speech-Language Pathology*, (just accepted, June 2015). doi: 10.1044/2015\_AJSLP-14-0037
- Pickering, M. (2003). Shared Territories: An element of culturally sensitive practice. *Folia Phoniatrica et Logopaedica*, 55, 287-292.
- Pickering, M., & McAllister, L. (2000). A conceptual framework for linking and guiding domestic cross-cultural and international practice in speech-language pathology. *Advances in Speech-Language Pathology*, 2, 93-106.
- Pine, J., M. (1992). Commentary on: How should frequency in input be measured? by E. Hoff-Ginsberg. *First Language*, 12, 245-249.



- Podmore, V., N., & St. George, R. (1986). New Zealand Maori and European mothers and their 3-year old children: Interactive behaviours in pre-school settings. *Journal of Applied Developmental Psychology*, 7, 373-382.
- Poole, B. D., & Loomis, D. K. (2009). *A comparative analysis of mail and internet surveys*. Paper presented at the Northeastern Recreation Research Symposium, United States of America.
- Prizant, B. M., Wetherby, A. M., & Roberts, J. E. (Eds.). (1993). *Communication disorders in infants and toddlers*. New York: Guilford Press.
- Quinn, N. (2005). Universals of child rearing. *Anthropological Theory*, 5, 477-516.
- Rao, N., McHale, J. P., & Pearson, E. (2003). Links between socialization goals and child-rearing practices in Chinese and Indian mothers. *Infant and Child Development*, 12(5), 475-492. doi: 10.1002/icd.341
- Redmond, E. C., & Griffith, C. J. (2003). Consumer food handling in the home: a review of food safety studies. *Journal of Food Protection*, 66, 130-161.
- Rescorla, L., & Fechnay, T. (1996). Mother-child synchrony and communicative reciprocity in late-talking toddlers. *Journal of Speech, Language, and Hearing Research*, 39, 200-208. doi: 10.1044/jshr.3901.200
- Rescorla, L., Roberts, J., & Dahlsgaard, K. (1997). Late talkers at 2: Outcome at age 3. *Journal of Speech, Language and Hearing Research*, 40, 556-566.
- Richman, A. L., Miller, P. M., & LeVine, R. A. (1992). Cultural and educational variations in maternal responsiveness. *Developmental Psychology*, 28(4), 614-621. doi: 10.1037/0012-1649.28.4.614
- Roach, P. (1998). Some languages are spoken more quickly than others. In L. Bauer & P. Trudgill (Eds.), *Language Myths* (pp. 150-158). London: Penguin.
- Robb, M., P., & Gillon, G. (2007). Speech rates of New Zealand English- and American English-speaking children. *Advances in Speech-Language Pathology*, 9, 1 – 8.
- Roberts, M. Y., & Kaiser, A. P. (2011). The effectiveness of parent-implemented language interventions: a meta-analysis. *American Journal of Speech-Language Pathology*, 20(3), 180-199. doi: 10.1044/1058-0360(2011/10-0055)
- Roberts, M. Y., & Kaiser, A. P. (2012). Assessing the effects of a parent-implemented language intervention for children with language impairments using empirical benchmarks: A pilot study. *Journal of Speech, Language & Hearing Research*, 55, 1655-1670.
- Rodríguez, B. L., Hines, R., & Montiel, M. (2009). Mexican American mothers of low and middle socioeconomic status: communication behaviors and interactive strategies during shared book reading. *Language, Speech, and Hearing Services in Schools*, 40, 271-282.
- Rodriguez, B. L., & Olswang, L. B. (2003). Mexican-American and Anglo-American mothers' beliefs and values about child rearing, education, and language impairment. *American Journal of Speech-Language Pathology*, 12, 452-462.
- Rogoff, B. (2003). *The cultural nature of human development*. Oxford: Oxford University Press.
- Rogoff, B., Mistry, J., Göncü, A., Mosier, C., Chavajay, P., & Heath, S. B. (1993). Guided Participation in cultural activity by toddlers and caregivers. *Monographs of the Society for Research in Child Development*, 58, 1-179.
- Rollins, P. R. (2003). Caregivers' contingent comments to 9-month old infants: Relationships with later language. *Applied Psycholinguistics*, 24, 221-234.
- Rowe, M., L. (2008). Child-directed speech: Relation to socioeconomic status, knowledge of child development and child vocabulary skill. *Journal of Child Language*, 35, 185-205. doi: doi:10.1017/S0305000907008343

- Rowe, M. L. (2012). A longitudinal investigation of the role of quantity and quality of child-directed speech in vocabulary development. *Child Development*, 83, 1762-1774. doi: 10.1111/j.1467-8624.2012.01805.
- Rowe, M. L., Pan, B. A., & Ayoub, C. (2005). Predictors of variation in maternal talk to children: a longitudinal study of low-income families [corrected] [published erratum appears in PARENTING SCI PRACT 2006 Jan 6(1):115]. *Parenting: Science & Practice*, 5, 285-310.
- Salas-Provence, M., B., Erickson, J. G., & Reed, J. (2002). Disabilities as viewed by four generations of one Hispanic family. *American Journal of Speech-Language Pathology*, 11, 151-162.
- Santiago, C., & Stansfield, J. (1998). Prioritisation in speech-language therapy departments in Scotland & Malaysia. *International Journal of Language and Communication Disorders*, 33, 102-107.
- Santos, R. M., & McCollum, J. A. (2007). Perspectives of parent-child interaction in Filipino mothers of very young children with and without disabilities. *Journal of Early Intervention*, 29( ), 243-261.
- Saraswathi, T. S., & Pai, S. (1997). Socialization and the Indian context. In H. Kao, S.R. & D. Sinha (Eds.), *Asian perspectives on psychology* (Vol. 19, pp. 74-92). New Delhi: Sage Publications.
- Saxton, M., Backley, P., & Gallaway, C. (2005). Negative input for grammatical errors: effects after a lag of 12 weeks. *Journal of Child Language*, 32, 643-672.
- Schieffelin, B. B., & Ochs, E. (1986). Language socialization. *Annual Review of Anthropology*, 15, 163-191. doi: 10.2307/2155759
- Schoeffel, P., & Meleisa, M. (1996). Pacific Island Polynesian attitudes to child training and discipline in New Zealand: Some policy implications for social welfare and education. *Social Policy Journal of New Zealand*. Retrieved from <https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/journals-and-magazines/social-policy-journal/spj06/06-pacific-children.html>
- Sen, H., Yavuz-Muren, H. M., & Yagmurlu, B. (2014). Parenting: The Turkish context. In H. Selin (Ed.), *Parenting across cultures: Child rearing, motherhood and fatherhood in non-Western cultures, sciences across cultures: The history of non-Western Science* (pp. 175-192). New York: Springer.
- Sharifzadeh, V.-S. (2011). Families with Middle Eastern roots. In E. Lynch, W & M. Hanson, J (Eds.), *Developing cross-cultural competence: A guide for working with children and their families* (pp. 392-432). Baltimore: Paul Brookes.
- Shupe, B., & Shupe, E. (2012, 9th September). Large Family Respect: Teaching children that formal is not formality, it is a sign of understanding. Retrieved from <http://www.largefamiliesonpurpose.com/2012/08/large-family-respect-teaching-children.html>
- Sibley, C. G., & Ward, C. (2013). Measuring the preconditions for a successful multicultural society: A barometer test of New Zealand. *International Journal of Intercultural Relations*, 37, 700-713.
- Simmons, N., & Johnston, J. (2007). Cross-cultural differences in beliefs and practices that affect the language spoken to children: Mothers with Indian and Western heritage. *International Journal of Language & Communication Disorders*, 37, 433-458.
- Sinclair, K. (1980). The Māoris in New Zealand History. *History Today*, 30, 39-44.
- Singh, S. J., Iacono, T., & Gray, K. M. (2011). A comparison of Malaysian and Australian speech-language pathologists' practices with children with developmental disabilities who are pre-symbolic. *International Journal of Speech-Language Pathology*, 13, 389-398.

- Singham, M. (2006). Multiculturalism in New Zealand – the need for a new paradigm. *Aotearoa Ethnic Network Journal*, 1, 33-37.
- Snow, C. E. (1972). Mothers' speech to children learning language. *Child Development*, 43, 550-565. doi: 10.1111/1467-8624.ep12107830
- Snow, C. E. (1995). Issues in the study of input: Finetuning, universality, individual and developmental differences, and necessary causes. In P. Fletcher & B. MacWhinney (Eds.), *The handbook of child language* (pp. 180-193). Oxford: Blackwell Publishers.
- Snow, C. E. (2014). Input to interaction to instruction: three key shifts in the history of child language research. *Journal of Child Language*, 41, 117-123. doi: doi:10.1017/S0305000914000294
- Snow, C. E., & Dickinson, D. K. (1990). Social sources of narrative skills at home and at school. *First Language*, 10, 87-103.
- Snyder, P. A., Rakap, S., Hemmeter, M. L., McLaughlin, T. W., Sandall, S., & McLean, M. E. (2015). Naturalistic instructional approaches in early learning: A systematic review. *Journal of Early Intervention*, 37, 69-97.
- Southwood, F., & van Dulm, O. (2015). The challenge of linguistic and cultural diversity: Does length of experience affect South African speech-language therapists' management of children with language impairment? *South African Journal of Communication Disorders*, 62, 1-14.
- Stivens, M. (2006). 'Family values' and Islamic revival: Gender, rights and state moral projects in Malaysia. *Women's Studies International Forum*, 29, 354-367. doi: <http://dx.doi.org/10.1016/j.wsif.2006.05.007>
- Stockman, I. J. (1996). The promises and pitfalls of language sample analysis as an assessment tool for linguistic minority children. *Language, Speech and Hearing Services in Schools*, 27, 355-366.
- Sue, V. M., & Ritter, L. A. (2012). *Conducting online surveys*. Los Angeles: Sage Publications.
- Taleb, T. F. A. (2013). Parenting styles and children's social skills as perceived by Jordanian mothers of preschool children. *Early Child Development and Care*, 183, 1646-1660. doi: 10.1080/03004430.2012.744988
- Taleb, T. F. A., & AlZoubi, R. R. (2015). Jordanian mothers' perceptions of their children's social competence: An examination of family factors and demographic variables. *Early Child Development and Care*, 185, 895-908. doi: 10.1080/03004430.2014.963067
- Tamis-LeMonda, C., & McFadden, K. E. (2010). Development in the United States of America. In M. H. Bornstein (Ed.), *Handbook of cultural developmental Science* (pp. 299-322). New York: Psychology Press.
- Tamis-LeMonda, C. S., Baumwell, L., & Cristofaro, T. (2012). Parent–child conversations during play. *First Language*. doi: 10.1177/0142723711419321
- Tamis-LeMonda, C. S., Bornstein, M. H., & Baumwell, L. (2001). Maternal responsiveness and children's achievement of language milestones. *Child Development*, 72, 748-767. doi: 10.1111/1467-8624.00313
- Tamis-LeMonda, C. S., Irene Nga-Lam, S., Florrie Fei-Yin, N., Kahana-Kalman, R., & Hirokazu, Y. (2013). Maternal teaching during play with four-year-olds: Variation by ethnicity and family resources. *Merrill-Palmer Quarterly*, 59, 361-398.
- Tan, P. L. (2010). A culturally sensitive framework for understanding knowledge workers from a non-western background. *Asia Pacific Journal of Human Resources*, 48, 108-125. doi: 10.1177/1038411109355379
- Tannock, R. (1988). Mothers' directiveness in their interactions with their children with and without Down syndrome. *American Journal on Mental Retardation*, 93, 154-165.

- Tannock, R., & Girolametto, L. (1992). Reassessing parent-focus language intervention programs. In S. F. Warren & J. Reichle (Eds.), *Causes and effects in communication and language intervention* (Vol. 1, pp. 49-79). Baltimore: Paul Brookes Publishing Co.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55. doi: 10.5116/ijme.4dfb.8dfd
- Teiser, J., Lamm, B., Böning, M., Graf, F., Gudi, H., Goertz, C., . . . Keller, H. (2014). Deferred imitation in 9-month-olds: How do model and task characteristics matter across cultures? *International Journal of Behavioral Development*, 38, 247-254.
- Thomas Joseph, P. (2006). Phonological acquisition among Malaysian English child speakers of Indian descent. *Malaysian Journal of Health Science*, 4, 13-26.
- Tilstra, J., & McMaster, K. (2007). Productivity, fluency, and grammaticality measures from narratives: Potential indicators of language proficiency? *Communication Disorders Quarterly* 29, 43-53. doi: 10.1177/1525740108314866
- Tizard, B., & Hughes, M. (1984). *Young children learning*. Cambridge, Massachusetts: Harvard University Press.
- Tomasello, M., & Farrar, M., Jeffrey. (1986). Joint attention and early language. *Child Development*, 57, 1454-1463.
- Tomasello, M., Mannle, S., & Kreuger, A. C. (1986). Linguistic environment of 1 to 2 year old twins. *Developmental Psychology*, 22, 169-176.
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, 96, 506-520. doi: 10.1037/0033-295X.96.3.506
- Triandis, H. C. (2000). Dialectics between cultural and cross-cultural psychology. *Asian Journal of Social Psychology*, 3, 185-195. doi: 10.1111/1467-839X.00063
- Triandis, H. C., & Brislin, R. W. (1984). Cross-cultural psychology. *American Psychologist*, 39(9), 1006-1016.
- Tulkin, S. R., & Kagan, J. (1972). Mother-child interaction in the first year of life. *Child Development*, 43, 31-41. doi: 10.1111/1467-8624.ep12185741
- Tulviste, T. (2004). Mothers' conversational styles across cultures. The cases of Estonia, Finland, Sweden, and the U.S. In B. N. Setiadi, A. Supratiknya, W. J. Lonner & Y. H. Pootinga (Eds.), *Ongoing themes in psychology and culture (Online Ed.)*. Melbourne, FL: International Association for Cross-Cultural Psychology.
- Tweed, R. G., & Lehman, D. R. (2002). Learning considered within a cultural context: Confucian and Socratic approaches. *American Psychologist*, 57, 89-99. doi: 10.1037/0003-066X.57.2.89
- Valdez-Menchaca, M., C., & Whitehurst, G., J. (1992). Accelerating language development through picture book reading: A systematic extension to Mexican Day Care. *Developmental Psychology*, 28, 1106-1114.
- van Balkom, H., Verhoeven, L., & van Weerdenburg, M. (2010). Conversational behaviour of children with developmental language delay and their caretakers. *International Journal of Language & Communication Disorders*, 45, 295-319. doi: 10.3109/13682820902994226
- Van Dort, S. (2005). Issues and innovations in clinical education: A perspective from Malaysia *Advances in Speech-Language Pathology*, 7, 170-172.
- van Kleeck, A. (1994). Potential cultural bias in training parents as conversational partners with their children who have delays in language development. *American Journal of Speech-Language Pathology*, 3, 67-78.
- Vigil, D. C. (2002). Cultural variations in attention regulation: a comparative analysis of British and Chinese-immigrant populations. *International Journal of Language & Communication Disorders*, 37, 433-458.

- Vigil, D. C., Hodges, J., & Klee, T. (2005). Quantity and quality of parental language input to late-talking toddlers during play. *Child Language Teaching & Therapy*, 21, 107-122.
- Vigil, D. C., & Hwa-Froelich, D. A. (2004). Interaction styles in minority caregivers: implications for intervention. *Communication Disorders Quarterly*, 25, 119-126.
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
- Wells, G. (1981). *Learning through interactions*. Cambridge: Cambridge University Press.
- Weiss, H., Kreider, H., Lopez, M., & Chatman, C. (2005). *Preparing educators to involve families: From theory to practice*. London: Sage Publications.
- Yu, J., Cheah, C. S. L., Hart, C. H., Sun, S., & Olsen, J. A. (2015). Confirming the multidimensionality of psychologically controlling parenting among Chinese-American mothers: Love withdrawal, guilt induction, and shaming. *International Journal of Behavioural Development*, 39, 285-292. doi: 10.1177/0165025414562238
- Zuniga, M., E. (2011). Families with Latino roots. In E. Lynch, W & M. Hanson, J (Eds.), *Developing cross-cultural competence: A guide for working with children and their families* (pp. 190-233). Baltimore: Paul Brookes.

## APPENDIX A

### Ethics Approval Letter



#### HUMAN ETHICS COMMITTEE

Secretary, Lynda Griffioen  
Email: [human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)

Ref: HEC 2012/65

29 June 2012

Sharimila Adaikkalasamy  
Department of Communication Disorders  
UNIVERSITY OF CANTERBURY

Dear Sharimila

The Human Ethics Committee advises that your research proposal "A cross cultural comparison of parent-child interaction and its association with children's verbal language skills and language intervention" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 28 June 2012.

Best wishes for your project.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Michael Grimshaw'.

Michael Grimshaw  
*Chair*  
*University of Canterbury Human Ethics Committee*

## APPENDIX B

### PARENT QUESTIONNAIRE

Today's Date: \_\_\_\_\_ (Day/Month/Year)

*The information provided on this questionnaire is strictly confidential.*

*This survey is **ONLY** for mothers who have children between 2-years old and 4-years old, i.e., your child must be between 24 months to 59 months old on the day you take this survey. If you **DO NOT** meet this eligibility, please indicate as appropriate and the survey will end here.*

**Please indicate your child's age group.**

- ☐ 2-years old (between 24 months -35 months old)
- ☐ 3-years old (between 36 months - 47 months old)
- ☐ 4-years old (between 48 months - 59 months old)
- ☐ My child is currently NOT between 2-years old and 4-years old (between 24 - 59 months old)

***Section A:** We would like to know your personal thoughts and ideas about young children who are between 2-years old and 4-years old (24 months - 59 months old). There are no right or wrong answers for all the questions on this Questionnaire. Kindly mark on either 'Strongly Disagree', 'Disagree', 'Neutral', 'Agree', or 'Strongly Agree' to let us know your opinion for each of the statement presented below.*

*Here is what the responses mean:*

***Strongly Disagree** = you strongly disagree with the statement;*

***Disagree** = you slightly disagree with the statement;*

***Neutral** = you neither disagree or agree with the statement;*

***Agree** = you slightly agree with the statement;*

***Strongly Agree** = you strongly agree with the statement.*

**Think about your child who is between 2-years old and 4-years old (24 months - 59 months old) as you give us your opinion about the following statements:**

AQ1	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A1. Young children have the desire to talk even though they have yet to start talking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A2. It is important to try to find out what young children are thinking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A3. It is important for parents to teach/tell young children what to say as they are too young to think on their own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A4. It is important for young children to be talkative.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A5. It is important for parents to be talkative with their young children.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A6. Young children ask too many questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A7. Young children learn best when they are given instructions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A8. Young children learn important things while playing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A9. Young children who spend time quietly observing tend to be smart.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Think about your child who is between 2-years old and 4-years old (24 months - 59 months old) as you give us your opinion about the following statements:

AQ2	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A10. The most important thing for young children to learn is family values.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A11. It is important for parents to play with their young children.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A12. It is important to emphasize early academic achievement in young children.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A13. It is more important for young children to speak clearly than to speak politely.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A14. It is more important for parents to teach young children during playtime than to simply have fun playing with them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A15. It is important for young children to learn the use proper titles (e.g. use of 'Auntie'/Uncle' or 'Mr/Mrs/Ms', etc.) with non-family adult members or strangers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A16. It is unnecessary for parents to talk to their young children during everyday routine activities (e.g. bathing, dressing, eating, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A17. It is important for parents to use gestures or signs when talking with young children.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A18. It is important for parents to ask their young children questions to test if they are learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A19. When children make errors in their speech, parents should correct them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

AQ3	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A20. Young children must speak to adults only when they are spoken to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A21. Young children learn to talk better when parents take control of the conversation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A22. When talking with young children, it is important that parents adjust their talk to the child's level (e.g. use shorter sentences, less complex words, higher pitch, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A23. Parents ought to do things for their young children, even if their children can do it themselves (e.g. parents ought to put on their child's shoes, even if the child is able to do it on his/her own).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A24. Young children are naturally quite independent and must be taught to depend on family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A25. It is impolite for young children to call adults who are non-family members or strangers by their first names.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Think about your child who is between 2-years old and 4-years old (24 months - 59 months old) as you give us your opinion about the following statements:

AQ3	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A26. Boys and girls have different needs for good communication skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A27. It is important for parents to accept the advice of grandparents or elders in the family about the way young children should be raised.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A28. A young child with speech and/or language difficulties is an embarrassment to the family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A29. It is important for parents to use traditional healing/medicine to help cure children's speech and/or language difficulties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A30. Parents and professionals who work with young children have equal knowledge about young children.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**SECTION B:** We would like to gather some ideas on how you might talk with your young child. We would like you to think of your child who is between 2-years old and 4-years old (24 months - 59 months old) when you answer. There are no right or wrong answers for these questions. Kindly indicate 'Hardly Ever', 'Sometimes', 'Very Often', or 'Almost Always' to let us know your opinion for each of the statement presented below.

Here is what the responses mean:

Hardly Ever = you rarely put into practice this statement with your child;

Sometimes = you occasionally put into practice this statement with your child;

Very Often = you frequently or regularly put into practice this statement with your child;

Almost Always = you constantly or all the time put into practice this statement with your child.

Here is a list of ways that you might talk with your young child. Kindly indicate how often do them.

Think especially about your child who is between 2-years old and 4-years old (24 months - 59 months old) as you answer.

BQ1	Hardly ever	Sometimes	Very Often	Almost Always
B1. I tell my child to say the correct word whenever he/she uses the wrong word.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B2. I let my child choose his/her own items when we are playing together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B3. I tell my child if he/she leaves some words out of a sentence.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B4. I read books with my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B5. I use flashcards to teach my child words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B6. I repeat what my child says, adding new words (e.g. if my child says "car", I may respond with, "yes, that's a red car").	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B7. I use words like, 'Don't.....', 'No.....' with my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B8. I use words like "Look at me", "Look here", etc., with my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B9. I play with my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B10. I encourage my child to talk to another person in the family about what we did together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Here is a list of ways that you might talk with your young child. Kindly indicate how often do them. Think especially about your child who is between 2-years old and 4-years old (24 - 59 months old) as you answer.

BQ2	Hardly ever	Sometimes	Very Often	Almost Always
B11. I use educational DVDs/television programs or computer programs to teach my child words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B12. I talk to my child during everyday routine tasks such as bathing, dressing, eating, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B13. I talk to my child about what is going on around us (e.g. "That is a pretty bird. Look, the bird is flying away now").	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B14. My child and I take turns when we are talking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B15. In a play session, I encourage my child to play with objects in a practical way (e.g. with a cup, I may encourage him/her to use the cup to drink water or pour water into the cup).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B16. I do most of the talking when my child and I are having a conversation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B17. I teach my child whenever I play with him/her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B18. I talk about what my child talks about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B19. I encourage my child to talk about what happened in the day when I was not with him/her (e.g. when I was at work or when my child was at preschool, etc).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B20. I tell my child, "that is wrong" or "say it properly", etc., whenever my child makes mistakes with his/her speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

BQ3	Hardly ever	Sometimes	Very Often	Almost Always
B21. I ask my child questions to which I already know the answer (e.g. "What colour is the sky?" etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B22. I ask my child "What is this?" questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B23. I use gestures (or signs) when talking with my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B24. I tell my child what to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B25. In a play session, I encourage my child to play with objects in various ways (e.g. use cups to build a tower, to catch an insect)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B26. I ask my child questions that require yes/no answers (e.g. "Is the cat hungry?", "Do you want a biscuit?", etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B27. I ask my child to repeat my words or sentences after me (e.g. you may say to your child, "Say 'ball'" or "Say, 'big car'").	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B28. I talk about what is going on when my child and I are playing or doing things together (e.g. When playing tea party, you may say, "Now, I'm pouring my tea. You're eating a cake").	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B29. I attach meaning to what my child might be saying (for example, if my child looks at the meowing cat and says 'cat', I might say, "yes, cat. I think the cat is hungry").	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B30. I verbally praise my child (e.g. 'well done', 'great work') whenever he/she shows good skills or a positive behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**SECTION C:** We would like some information on (i) your young child who is between 2-years old and 4-years old (24 months - 59 months old); (ii) yourself and your family; and (iii) your culture. The information given will help us understand your viewpoints and it is strictly confidential.

**Part 1:** Questions 1-7 refer to the young child that you were thinking about in Section B of the Questionnaire. Kindly provide us with additional information on the young child you were thinking about by marking the appropriate box and by giving a brief description, where appropriate.

CQ1. What is the gender of this child?

- ☐ Male  
☐ Female

CQ2. Is this child a twin?

- ☐ Yes  
☐ No

CQ3 Does your young child have any general difficulties as listed below or a medical condition?

	Yes	No	vii) If ticked Yes, briefly tell us about the difficulties
i) Do you think your child has any communication, speech and/or language difficulties or delay?	<input type="radio"/>	<input type="radio"/>	
ii) Do you think your child has academic or learning difficulties?	<input type="radio"/>	<input type="radio"/>	
iii) Do you think your child has behavioural or social difficulties?	<input type="radio"/>	<input type="radio"/>	
iv) Do you think your child has physical difficulties? (E.g. walking, etc.)	<input type="radio"/>	<input type="radio"/>	
v) Do you think your child has hearing difficulties?	<input type="radio"/>	<input type="radio"/>	
vi) Is your child diagnosed with a medical condition?	<input type="radio"/>	<input type="radio"/>	

CQ4i) Tell us about your child's communication, speech and language developmental skills.

Does your child communicate in words?

- ☐ Yes  
☐ No

*(If 'No' is ticked, Skip to CQ4iii).*

CQ4ii) How many words per sentence does your child use to communicate?

- ☐ 1 word per sentence  
☐ 2-3 words per sentence  
☐ 3-4 words per sentence  
☐ 4 words or more per sentence

CQ4iii) When did your child produce his/her first words?

- ☐ before 1 year old  
☐ between 1-1½ years old  
☐ between 1½ -2 years old  
☐ after 2 years old  
☐ after 3 years old  
☐ no words yet

CQ4iv) Does your child follow verbal (spoken) instructions or directions?

- ☐ Yes  
☐ No

CQ4v) Has your child received any speech and language therapy sessions?

- ☐ Yes  
☐ No

CQ5 Please indicate **YOUR CHILD'S** native/non-native language/s. Please also indicate your child's 1st language. If your child is bilingual or multilingual, do indicate his/her 2<sup>nd</sup> and/or 3rd languages as well.

Language	Do you consider this language your child's:			Do you consider this language your child's :			
	Native language	Non-native language	Not Applicable	1st language	2nd language	3rd language	Not Applicable
English	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Māori	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other language/dialect (Please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other language/dialect (Please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CQ6 How often does your child hear the following languages at home?

Language	Hardly Ever	Sometimes	Very Often	Almost Always	Not Applicable
English	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Māori	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other language/dialect (please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other language/dialect (please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CQ7 Who does your child spend most of his/her daytime with?

- ☐ Mother  
☐ Father  
☐ My other children  
☐ Grandparents  
☐ Babysitters  
☐ Teachers/Helpers (at kindergarten)  
☐ Other (please specify): \_\_\_\_\_

**Part II:** Questions 8-24 refer to information regarding yourself and your family. Kindly provide us the information by marking on the appropriate box and by giving us a brief description where appropriate.

CQ8 What is your nationality/citizenship? (Kindly mark the relevant boxes if you hold dual nationalities/citizenships).

- ☐ New Zealander
- ☐ British
- ☐ American
- ☐ Australian
- ☐ South African
- ☐ Other (please state): \_\_\_\_\_

CQ9 How do you best describe your ethnic background?

- ☐ NZ European
- ☐ European
- ☐ Māori
- ☐ Pacific peoples
- ☐ Other (please state): \_\_\_\_\_
- ☐ Mixed Ethnicity (please state): \_\_\_\_\_

CQ10 What is your age?

- ☐ 18 years and under
- ☐ 19 years
- ☐ 20 years
- ☐ 21 years
- ☐ 22 years
- ☐ 23 years
- ☐ 24 years
- ☐ 25 years
- ☐ 26 years
- ☐ 27 years
- ☐ 28 years
- ☐ 29 years
- ☐ 30 years
- ☐ 31 years
- ☐ 32 years
- ☐ 33 years
- ☐ 34 years
- ☐ 35 years
- ☐ 36 years
- ☐ 37 years
- ☐ 38 years
- ☐ 39 years
- ☐ 40 years
- ☐ 41 years
- ☐ 42 years
- ☐ 43 years
- ☐ 44 years
- ☐ 45 years
- ☐ 46 years
- ☐ 47 years

- ☐ 48 years
- ☐ 49 years
- ☐ 50 years and above

CQ11 What is the name of the City in New Zealand you are currently residing in?

- ☐ Christchurch
- ☐ Other (please state): \_\_\_\_\_

CQ12 How long have you lived in New Zealand?

- ☐ since birth
- ☐ less than 1 year
- ☐ 1 year
- ☐ 2 years
- ☐ 3 years
- ☐ 4 years
- ☐ 5 years
- ☐ 6 years
- ☐ 7 years
- ☐ 8 years
- ☐ 9 years
- ☐ 10 years
- ☐ 11 years
- ☐ 12 years
- ☐ 13 years
- ☐ 14 years
- ☐ 15 years
- ☐ 16 years
- ☐ 17 years
- ☐ 18 years
- ☐ 19 years
- ☐ 20 years
- ☐ 25 years
- ☐ 26 years
- ☐ 27 years
- ☐ 28 years
- ☐ 29 years
- ☐ 30 years and above

CQ13 What is your marital status?

- ☐ Married/in Marital relationship
- ☐ Divorce
- ☐ Separated
- ☐ Widowed
- ☐ Never married

*(If 'Married/in Marital relationship' Is Selected, Please Answer CQ14. If Not, Skip to CQ15).*

CQ14 Please state your spouse/partner's occupation: \_\_\_\_\_

CQ15 Are you currently a full-time stay-at-home parent?

- ☐ Yes  
☐ No

*(If 'Yes' Is Selected, Then Skip To CQ18).*

CQ16 Please state your occupation: \_\_\_\_\_

CQ17 Which of the following best describe your working hours?

- ☐ Full-time  
☐ Part-time or Flexible time  
☐ Other (please state): \_\_\_\_\_

CQ18 Please state the age of all your children.

1st Child: \_\_\_\_\_ 2nd Child: \_\_\_\_\_ 3rd Child: \_\_\_\_\_  
4th Child: \_\_\_\_\_ 5th Child: \_\_\_\_\_ 6th Child: \_\_\_\_\_

CQ19 Other than yourself, who else lives in your home?

- ☐ Spouse/Partner  
☐ Child/Children  
☐ Grandfather  
☐ Grandmother  
☐ Uncle  
☐ Aunt  
☐ Maid  
☐ Other (please state): \_\_\_\_\_

CQ20 Mark the highest level of education that you have completed.

- ☐ Primary school  
☐ Secondary/High School  
☐ Certificate/Diploma  
☐ Bachelor's degree (e.g. BA, BSc, etc)  
☐ Advanced degree (e.g. MA, MSc, PhD)

CQ21 How often do you use the following languages to talk/communicate with your child who is between 2-years old and 4-years old (24 months - 59 months old)? Please mark as appropriate.

Language	Hardly Ever	Sometimes	Very Often	Almost Always	Not Applicable
English	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Māori	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other language/dialect (please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other language/dialect (please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



CQ22 Irrespective of which language/languages you use, approximately how many hours per day do you spend time talking/communicating with your child who is between 2-years old and 4-years old (24 - 59 months old)?

- ☐ Less than ONE hour per day
- ☐ 1-2 hours per day
- ☐ 2-3 hours per day
- ☐ 3-4 hours per day
- ☐ 4-5 hours per day
- ☐ 5 hours or more per day

CQ23 Please give us some information on the language/languages you know, as applicable.

Language/Dialect	Understanding	Speaking	Reading	Writing
English	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable
Māori	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable
Other (please state):	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable
Other (please state):	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable

CQ24 Please indicate YOUR native/non-native language/s. Please also indicate your 1st language. If you are bilingual or multilingual, do indicate your 2<sup>nd</sup> and/or 3<sup>rd</sup> language as well.

	Do you consider this language your:			Do you consider this language your :			
	Native language	Non-native language	Not Applicable	1st language	2nd language	3rd language	Not Applicable
English	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Māori	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other language/dialect (Please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other language/dialect (Please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



*Part III: Question 25-28 requires some information regarding your cultural background and the purpose of play with your child. Kindly provide us the information in the space provided.*

CQ25 Please rate the importance of the following to your cultural identity (or culture). State any other aspect/s that might reflect your cultural identity under 'Other'.

	Very Unimportant	Unimportant	Neither Important OR Unimportant	Important	Very Important
My name and/or family name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My language	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The clothes I wear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My nationality/citizenship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family beliefs/values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My ethnicity/race	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My religion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My cultural customs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The food I eat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CQ26 Tell us about the TWO most important aspects of your family beliefs/values.

- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_

CQ27 What might be the MAIN purpose of your play with your young child?

- ☐ To teach my child words.
- ☐ To have fun with my child.
- ☐ Other (please state): \_\_\_\_\_

CQ28 If you would like to share any other information or comment, we would like to hear from you.

---



---



---

✓ I would like to receive a brief summary of the study outcome. Do send it to my:

Email: \_\_\_\_\_ Name: \_\_\_\_\_

**THANK YOU FOR YOUR PARTICIPATION**

## Appendix C

Mother and Spouse/Partner Occupation categorized into Four Levels of the International Standard Classification of Occupations (International Labour Office Geneva, 2012)

No. Professions:		MALAYSIAN DATA				NEW ZEALAND DATA					
		Spouse/ Partner	Total N	Mo	Total N	Grand Total	Spouse/ Partner	Total N	Mo	Total N	Grand Total
Level FOUR Professions											
1	Company Directors/Business Owners	√	32	√	4	35	√	5	√	1	6
2	Managers	√	23	√	9	34	√	10	√	5	15
3	Engineers	√	18	√	4	22	√	7	X	0	7
4	Medical Doctors/Consultants	√	8	√	4	12	√	2	√	3	5
5	Lawyers	√	6	√	2	8	X	0	√	2	2
6	IT Consultants	√	6	√	3	9	√	4	X	0	4
7	Teachers	√	5	√	23	29	√	7	√	6	13
8	Accountants	√	4	√	3	7	√	1	√	1	2
9	Architects	√	3	√	2	5	√	0	X	0	0
10	Actuarist/Financial Advisors	√	2	√	1	3	√	0	X	0	0
11	Designers (Graphic, Web)	√	2	X	0	2	√	2	X	0	2
12	Quantity Surveyors	√	1	X	0	1	√	2	X	0	2
13	Assistant Professor/Lecturer	√	1	√	3	4	√	0	X	0	0
14	Auditors	√	1	√	1	2	√	0	X	0	0
15	Health care professionals (Nurse, SLT, Psychologists)	X	0	√	8	8	X	1	√	7	8
16	Business Analyst	X	0	X	0	0	X	0	√	1	1
17	Librarian	X	0	X	0	0	X	1	√	3	4
18	Advisor/Consultant/Chief Officer	X	0	X	0	0	√	4	√	4	8
19	Mathematician	X	0	X	0	0	√	1	X	0	1
20	Economist	X	0	X	0	0	√	1	X	0	1
21	Marine Scientist/Researcher	X	0	X	0	0	√	1	X	1	2
(21)	Sub Total (Level Four):		112		67	181		49		34	83

No.	Professions:	MALAYSIAN DATA				NEW ZEALAND DATA					
		Spouse/ Partner	Total N	Mo	Total N	Grand Total	Spouse/ Partner	Total N	Mo	Total N	Grand Total
	<b>Level THREE Professions</b>										
22	Officers (Bank and Government)	√	10	√	11	21	X	0	X	0	0
23	Sales & Marketing/ Broker Agents	√	8	√	6	16	√	5	√	1	6
24	Technician	√	8	√	1	9	√	1	X	0	1
25	Executives/Supervisor/ Team Leader	√	7	√	18	24	√	3	X	0	3
26	Research Assistants	√	1	√	2	3	√	0	X	0	0
27	TV Producer	√	1	X	0	1	√	0	X	0	0
28	Translator	√	1	X	0	1	√	0	X	0	0
29	Draughtsman	√	1	X	0	1	√	0	X	0	0
30	Radiographer/Sonographers	X	0	√	1	1	X	0	√	1	1
31	Administrators/Coordinators/ Controllers	X	0	√	9	9	√	5	√	2	7
32	Pilot	X	0	X	0	0	X	0	√	1	1
33	Retail/Sports Manager	X	0	√	2	0	√	2	X	0	2
34	Builder	X	0	X	0	0	√	4	X	0	4
35	Coach	X	0	X	0	0	√	1	X	0	1
(14)	Sub Total (Level Three):		37		50	86		21		5	26
	<b>Level TWO Professions</b>										
36	Army/Military Officer/ Firefighter	√	8	√	5	13	√	1	X	0	1
37	Drivers (bus, lorry, taxi)	√	6	√	1	7	X	0	X	0	0
29	Customer/Administration/ Sales Assistant/Promoters/Clerks	√	5	√	17	19	√	1	√	5	6
30	Policeman	√	3	X	0	3	X	0	X	0	0
31	Maintenance Supervisor	√	2	X	0	2	√	0	X	0	0
32	Mechanic/Foreman/Electrician/Fabricator	√	2	X	0	2	√	4	X	0	4
33	Yoga teacher/Trainer	√	1	√	1	2	X	0	X	0	0
36	Teacher Aide	X	1	√	3	2	X	0	X	0	0
35	Secretary	X	0	√	4	4	X	0	X	0	0

No.	Professions:	MALAYSIAN DATA				NEW ZEALAND DATA					
		Spouse/ Partner	Total N	Mo	Total N	Grand Total	Spouse/ Partner	Total N	Mo	Total N	Grand Total
	Level TWO Professions (Cont..)										
37	Blogger	X	0	√	1	1	X	0	X	0	0
38	Cashier	X	0	√	1	1	X	0	X	0	0
39	Construction Worker	X	0	X	0	0	√	1	X	0	1
40	Barista/Lolly Maker	X	0	X	0	0	√	2	X	0	2
41	Barber	X	0	X	0	0	√	1	X	0	1
42	Dairy Farmer	X	0	X	0	0	√	1	X	0	1
(16)	Sub Total (Level Two):		29		33	57		11		5	16
	Level ONE Professions										
43	General Worker	√	4	X	0	4	X	0	X	0	0
44	Labourer (including spare parts handler)	√	2	X	0	2	X	0	X	0	0
45	Office Despatch	√	1	X	0	1	X	0	X	0	0
46	Parking attendant	√	1	X	0	1	X	0	X	0	0
47	Meter reader	√	1	X	0	1	X	0	X	0	0
48	Caretaker	√	1	X	0	1	X	0	X	0	0
49	Agricultural worker	√	1	X	0	1	X	0	X	0	0
50	Cleaner	X	0	X	0	0	√	1	X	0	1
	Sub Total (Level One):		11		0	11		1		0	1
	GRAND TOTAL LEVELS 1-4		185		150			82		44	
	DID NOT STATE PROFESSION	10			8			1		0	
	STAY-HOME MOTHERS/FATHERS		0		41			2		41	
	TOTAL		199		199			85		85	

Note: X = No; √ = Yes

## Appendix D

### Survey Study 1 Cover Letter for Organizations

Department of Communication Disorders

College of Science

Tel: +64 3 364 2431, Clinic: +64 3 364 2408, Fax: +64 3 364 2760

[www.cmds.canterbury.ac.nz](http://www.cmds.canterbury.ac.nz)



**Our Ref: SS1CL/20130111/**

**25<sup>th</sup> July 2012**

Type address here

Dear (Principal/Director/President),

**PhD Research Project entitled, "Beliefs and practices related to parent-child interactions across cultures".**

My name is Sharimila Adaikkalasamy and I am currently undertaking a PhD at the University of Canterbury, Christchurch, New Zealand under the supervision of Professor Thomas Klee and Associate Professor Catherine Moran. As a requirement of the degree, I am conducting a research project and would like to ask for your assistance.

This PhD research project is entitled, "*Beliefs and practices related to parent-child interactions across cultures*". The aim of the project is to identify similarities and differences in the interaction patterns across cultural groups residing in Malaysia. We are gathering this information to help us better understand cultural differences in the hope that it will help us make recommendations to develop and deliver an appropriate program/ service when working with families with young children from diverse cultural backgrounds.

To complete this project, we require the participation of mothers who have children between 2-years old and 4-years of old (24 months to 59 months old). We are contacting you to enquire as to whether we are able to recruit participants from your preschool/centre/organization. We are seeking your approval and assistance:

- (i) To display our leaflet (Advertisement Flyer) at your preschool/centre/organization, and;
- (ii) To distribute an Information Sheet to all mothers with young children who are between 2-years old and 3-years old at your preschool/centre/organization.

The leaflet and information sheet will contain information on our research project and my contact details. We have attached a copy of the leaflet and information sheet for your perusal. We have also attached a letter on the PhD Research Project for your record.

Page 1 of 3

Speech-Language Therapy programme accredited by the New Zealand Speech-Language Therapists' Association  
Audiology programme endorsed by the New Zealand Audiological Society

University of Canterbury Private Bag 4800, Christchurch 8140, New Zealand. [www.canterbury.ac.nz](http://www.canterbury.ac.nz)

Department of Communication Disorders

College of Science

Tel: +64 3 364 2431, Clinic: +64 3 364 2408, Fax: +64 3 364 2760

[www.cmds.canterbury.ac.nz](http://www.cmds.canterbury.ac.nz)



The project has been reviewed and approved by the University of Canterbury Human Ethics Committee.

Kindly let us know if you are able to assist us in our project by completing the **PhD RESEARCH PROJECT RESPONSE FORM** below. If you have any questions about the project, please email Sharimila at: [sharimila.adaikkalasamy@pg.canterbury.ac.nz](mailto:sharimila.adaikkalasamy@pg.canterbury.ac.nz)

Thank you.

Yours sincerely,

**Sharimila Adaikkalasamy**

PhD Student

Department of Communication Disorders

University of Canterbury

Private Bag 4800

CHRISTCHURCH 8140

New Zealand

**Attachments:**

1. Advertisement Flyer on the research project
2. Information Sheet and Consent Form on the research project.

## Appendix E

### Survey Study 1 Research Leaflet

# Sip Coffee and Help out in Research



*If you are a MUM:*

- of a child aged between 2 – 4 years,
- speak English as your native language,
- and, live in New Zealand.

### ***What can you do?***

Complete an online questionnaire about your thoughts, ideas and practices related to talk and interaction with young children (20 -25 minutes).

### ***Your contribution will help us:***

- understand ways NZ mums talk and interact with their children, and,
- recommend appropriate ways for Speech-Language Therapists to work with families, in particular, children with speech, language or communication difficulties.

### ***If you would like to participate in the project:***

Email: [sharimila.adaikkalasamy@pg.canterbury.ac.nz](mailto:sharimila.adaikkalasamy@pg.canterbury.ac.nz) or ring +64 3 364 2987 ext. 8193 (until 31<sup>st</sup> March 2014)

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee. All information provided on the Questionnaire is strictly confidential and treated anonymously. No names are mentioned.

*"Beliefs and practices related to parent-child interactions across cultures"*

## Appendix F

### Survey Study 1 Information Sheet



Department of Communication Disorders  
Child Language Centre  
7, Creyke Road  
Telephone: +64 3 364 2987 ext. 8193  
Email: [sharimila.adaikkalasamy@pg.canterbury.ac.nz](mailto:sharimila.adaikkalasamy@pg.canterbury.ac.nz)

1<sup>st</sup> February 2014

**PhD Research Project titled: "*Beliefs and practices related to parent-child interactions across cultures*".**

#### INFORMATION SHEET

My name is Sharimila Adaikkalasamy and I am currently undertaking a PhD at the University of Canterbury, Christchurch, New Zealand. As a requirement of the degree, I am conducting a research project.

The aim of the project is to identify similarities and differences in the interaction patterns across different cultural group. We are gathering this information to help us better understand cultural differences in the hope that it will help us make recommendations to develop and deliver an appropriate program/ service when working with families with young children from diverse cultural backgrounds.

For this phase of study, we would like to invite all mothers who meet the following research criteria to be part of the study:

- (i) have a child between the ages of 2-years old and 4-years old,
- (ii) speak English as their native language, and,
- (iii) are residing in New Zealand.

Your involvement in this project will include completion of a Questionnaire that might take up 20-25 minutes to complete. Access to internet is required in order to complete the Questionnaire. We will email you the webpage link from which you could follow the instructions to complete the Questionnaire electronically. If you do not have internet access, we will be happy to send you the Questionnaire to your postal address with a self-stamped return envelope.

There are no identified risks when completing the questionnaire. Participation is voluntary and you have the right to withdraw at any stage without penalty. If you withdraw, I will remove information relating to you. Data removal after the 1<sup>st</sup> of April 2014 will not be possible.

You may receive a copy of the project results by contacting the researcher at the conclusion of the project.

The Questionnaire is strictly confidential. All information provided in the questionnaire will be assured of confidentiality. All data will be stored in a locked filing cabinet in the Child Language Centre in Christchurch or in a locked bag when away from Christchurch. All electronic data pertaining to this study will be stored confidentially in a password-



secured computer. Only Sharimila and her supervisors, Professor Thomas Klee and Associate Professor Catherine Moran will have access to the raw data.

The results of the project will be written up and submitted to the university. A manuscript may also be submitted to a scientific journal for review and eventually published. Any personal data or information provided in the questionnaire will not be divulged or identifiable to you. No names will be used in any of our reports or presentations arising from this study. All raw data pertaining to this study will be stored in a confidential manner for the required 10 years, after which these will be completely destroyed. The completed PhD thesis will be a public document via the University of Canterbury library database.

This research project is being carried out as a requirement for a PhD in Speech and Language Sciences, by Sharimila Adaikkalasamy under the supervision of Professor Thomas Klee and Associate Professor Catherine Moran who can be contacted at [thomas.klee@canterbury.ac.nz](mailto:thomas.klee@canterbury.ac.nz) and [catherine.moran@canterbury.ac.nz](mailto:catherine.moran@canterbury.ac.nz) respectively. They will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee (HEC No: 2012/65), and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)).

If you agree to participate in the study, you are asked to contact Sharimila at [sharimila.adaikkalasamy@pg.canterbury.ac.nz](mailto:sharimila.adaikkalasamy@pg.canterbury.ac.nz) or telephone at +64 3 364 2987 ext. 8193. The webpage link to complete the Questionnaire will be sent to your email.

***Sharimila Adaikkalasamy***

## Appendix G

### Survey Study 1 Confidentiality Agreement for Inter-Rater Task

Department of Communication Disorders

College of Science

Tel: +64 3 364 2431, Clinic: +64 3 364 2408, Fax: +64 3 364 2760

[www.cmds.canterbury.ac.nz](http://www.cmds.canterbury.ac.nz)

[sherimila.adanik@canterbury.ac.nz](mailto:sherimila.adanik@canterbury.ac.nz)



**PhD Project title: “*Beliefs and practices related to parent-child interactions across cultures*”**

### CONFIDENTIALITY AGREEMENT

I \_\_\_\_\_ (legal name of research data coder/entrant) hereby agree to confidentially transfer research data from the manual Questionnaire onto the electronic Qualtrics database systems as part of the reliability check for \_\_\_\_\_ (researcher's name) related to her study titled: “*Beliefs and practices related to parent-child interactions across cultures*”.

I have read and understood the Training Manual and have undergone practice sessions to enter data.

I agree not to discuss or disclose any personal information or research data contained in the Questionnaire or related document provided to me at all times.

I will not make copies or keep records of any information provided to me, digitally, manually or by any other means, other than what is required for the project.

I agree to keep and maintain full confidentiality on all information provided to me and on any aspect related to the above-named project.

I HAVE READ AND UNDERSTOOD THE ABOVE AND AGREE TO ADHERE TO THE ABOVE EXPECTATIONS WITH RESPECT TO MAINTAINING CONFIDENTIALITY OF RESEARCH PARTICIPANTS AND ANY OTHER PERSONAL INFORMATION OR RESEARCH DATA CONCERNING THE ABOVE-NAMED PROJECT AT ALL TIMES.

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Printed name:** \_\_\_\_\_

**Contact Number:** \_\_\_\_\_

Speech-Language Therapy programme accredited by the New Zealand Speech-Language Therapists' Association  
Audiology programme endorsed by the New Zealand Audiological Society

University of Canterbury Private Bag 4800, Christchurch 8140, New Zealand. [www.canterbury.ac.nz](http://www.canterbury.ac.nz)

## Appendix H

### Training Manual for Questionnaire Data Entry

#### **TRAINING MANUAL FOR QUESTIONNAIRE DATA ENTRY**

##### **PART A: CODER ELIGIBILITY CRITERIA – CHECKLIST**

1. Are you a Malaysian? ☐ Yes ☐ No
2. Have you lived in Malaysia since birth? ☐ Yes ☐ No
3. Have you been educated in the Malaysian school system (primary and secondary school)? ☐ Yes ☐ No
4. Are you able to speak, comprehend, read and write:
  - i) English ☐ Yes ☐ No
  - ii) Bahasa Malaysia/Malay ☐ Yes ☐ No
5. Rate your language competency in English and Bahasa Malaysia/Malay below:

Languages/Dialects	Understanding	Speaking	Reading	Writing
English	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable
Bahasa Malaysia/Malay	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/> Not Applicable

##### **PART B: TRAINING & PRACTICE SESSIONS**

1. Are you able to volunteer 6-10 hours of your time to complete reliability checks for a PhD research study? ☐ Yes ☐ No
2. Have you been trained in the coding system and the functional classification system (via the Training Manual) for the reliability check? ☐ Yes ☐ No  
 If yes, please provide the following information:  
 Date & Time of training: \_\_\_\_\_  
 Trained by: \_\_\_\_\_
3. Have you had practice sessions in the coding system and functional classification systems for the reliability check? ☐ Yes ☐ No  
 If yes, please provide the following information:  
 Date & Time of practice session: \_\_\_\_\_  
 Location: \_\_\_\_\_
4. At the end of your training and practice session, how do you rate your ability to carry out the reliability check for the PhD study?  
☐ Very good ☐ Good ☐ Average ☐ Poor ☐ Very Poor

## PART C: CONFIDENTIALITY AGREEMENT (Appendix G)

### PART D: TRAINING MANUAL FOR QUESTIONNAIRE DATA ENTRY

General Instructions:

#### A. Language of the Paper Questionnaire.

- If the Questionnaire was completed in Bahasa Malaysia/Malay, go to the top right hand corner of Qualtrics and change the language option from English to Bahasa Melayu and continue with data entry
- All written data must be entered in the same language that the respondent had written in.

#### B. NEXT and BACK Arrows on Qualtrics

- Click on next arrow for the next question; back arrow to view previous Questions

#### C. Prompts to answer Questions on Qualtrics

When questions are not answered on Qualtrics, a click on the "Next" arrow will result in either:

- i) A choice to answer the question; i.e.; to "answer the question" or to "continue without answering"; or
  - ii) A need to answer the question to proceed to the next question. Here, the statement "sorry, you cannot continue until you correct the following: Please answer the question" will pop up.
- In both instances, ensure that data on Paper Q/N correctly match data entered on Qualtrics.
  - If the Paper Q/N has missing answers/uncompleted answers and Qualtrics does not allow you to go to next question without answering the Question, close Qualtrics account and stop all data entry work for the next 4 hours. This will then be recorded as incomplete Questionnaire on Qualtrics. **It is important that work on data entry is only resumed after 4 hours of abandoning Qualtrics.**

### **Category: Child's age group**

- *Reference on Paper Q/N: Please indicate your child's age group (above Section A)*
- *Ref on Qualtrics (indicated in grey block): 1*

**Criterion for data entry:**

- a) The age group is clearly indicated on paper and reflected correctly on Qualtrics
- b) The ticked age group matches the information provided in CQ18. In instances where
  - the answer in CQ18 indicates the presence of children in 2 or more of the categories, i.e. 2, 3 and 4 year old, or
  - the answer on CQ18 does not match with the answer provided on the first page (child's age group section)

**THE ANSWER PROVIDED ON THE FIRST PAGE (CHILD'S AGE GROUP SECTION) WILL BE TAKEN AS ACCURATE AND FINAL.**

- c) If respondent ticked/ indicated answer for "My child is currently NOT between 2-years old and 4-years old (between 24 - 59 months old)", and continued with the survey on paper Q/N, correctly reflect this answer on Qualtrics. When this is done, the survey on Qualtrics will end immediately. You will not be required to transfer the remainder responses on the paper Q/N.

### **Category: Section A**

- *Paper Q/N Ref:* AQ1-AQ3 (Statements A1-A30)
- *Qualtrics Ref:* AQ1- AQ3 (Statements A1-A30)

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics.

---

### **Category: Section B**

- *Paper Q/N Ref:* BQ1-BQ3 (Statements B1-B30)
- *Qualtrics Ref:* BQ1-BQ3 (Statements B1-B30)

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics.

---

### **Category: Section C Part I - Questions 1-7**

#### **CQ1 What is the gender of this child?**

- *Paper Q/N Ref:* CQ1 *Qualtrics Ref:* CQ1

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics. All other comments/scribbling in the area are ignored.

---

#### **CQ2 Is this child a twin?**

- *Paper Q/N Ref:* CQ2 *Qualtrics Ref:* CQ2

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics. All other comments/scribbling in the area are ignored.

---

#### **CQ3 Does your young child have any general difficulties as listed below or a medical condition?**

- *Paper Q/N Ref:* CQ3 *Qualtrics Ref:* CQ3

**Criterion:**

- For CQ3 i) to vi): the respondent's chosen answer on paper (Yes or No) has to be correctly reflected on Qualtrics.
  - If any of the respondents have ticked 'Yes', for any of the questions in CQ3 i) to vi), the statement: "CQ3viii) Briefly tell us about the difficulties" will appear as the next set of Question. According to the respondent's language choice, correctly type the respondent's answers in the space provided. You will need to indicate the number/s before typing. E.g. If the parent has ticked "yes" in (iii), in the space provided for CQ3vii), type (iii) before the description.
  - If the respondent has ticked "yes" for any of the Questions in CQ3 i) – vi), but has not described the difficulties in CQ3vii), then, state the corresponding number and insert "-"
  - If there more than one "yes" ticked for Question CQ3 i)-vi), and no description is provided on paper under CQ3vii), type "no description provided" on Qualtrics.
- 

#### **CQ4i) Tell us about your child's communication, speech and language developmental skills. Does your child communicate in words?**

- *Paper Q/N Ref:* CQ4i) *Qualtrics Ref:* CQ4i)

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics. All other comments/scribbling in the area are ignored.



**CQ4ii) How many words per sentence does your child use to communicate?** (will only be shown if respondent selected 'Yes' for CQ4i)

- Paper Q/N Ref: CQ4ii) Qualtrics Ref: CQ4ii)

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics. All other comments/scribbling in the area are ignored.

---

**CQ4iii) When did your child produce his/her first words?**

- Paper Q/N Ref: CQ4iii) Qualtrics Ref: CQ4iii)

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics. All other comments/scribbling in the area are ignored.

---

**CQ4ix) Does your child follow verbal (spoken) instruction or directions?**

- Paper Q/N Ref: CQ4ix) Qualtrics Ref: CQ4ix)

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics. All other comments/scribbling in the area are ignored.

---

**CQ4v) Has your child received any speech and language therapy sessions?**

- Paper Q/N Ref: CQ4v) Qualtrics Ref: CQ4v)

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics. All other comments/scribbling in the area are ignored.

---

**CQ5 Please indicate your child's native/non-native language/s. Please also indicate your child's 1st language and his/her 2nd, 3rd or 4th language, if your child is bilingual or multilingual.**

- Paper Q/N Ref: CQ5 Qualtrics Ref: CQ5

**Criterion:**

- The respondent's chosen answer on paper is reflected correctly on Qualtrics
- If the respondent's answer is not indicated/ticked in any category, leave it blank on Qualtrics and click to see the next set of questions. You will then see a prompt (as below) to answer the question that was left blank on Qualtrics.

**There is 1 unanswered question on this page**

Would you like to continue?

Answer the Question

Continue Without Answering

Click on "Continue Without Answering" and move to CQ6. Check that all data entered on Qualtrics matches the Paper Q/N, use the "previous" and next "button".

---

**CQ6 How often does your child hear the following languages at home?**

- Paper Q/N Ref: CQ6 Qualtrics Ref: CQ6

**Criterion:**

- The respondent's chosen answer on paper is reflected correctly on Qualtrics
- If the respondent's answer is not indicated/ticked in any category, leave it blank on Qualtrics and click to see the next set of questions. You will then see a prompt (as below) to answer the question that was left blank on Qualtrics.

**There is 1 unanswered question on this page**

Would you like to continue?

[Answer the Question](#)

[Continue Without Answering](#)

Click on "*Continue Without Answering*" and move to CQ6. Check that all data entered on Qualtrics matches the Paper Q/N, use the "previous" and next "button".

**CQ7 Who does your child spend most of his/her daytime with?**

- *Paper Q/N Ref: CQ7* *Qualtrics Ref: CQ7*

Question CQ7 on Qualtrics is designed whereby only **ONE** answer can be entered.

**Criterion:**

- a) The respondent's chosen answer on paper is reflected correctly on Qualtrics
- b) If the respondent has ticked more than one answer on Paper Q/N, click "Others (please specify)" category on Qualtrics and type all of respondent's answers in the space provided.

---

## *Part II – Questions 8-24*

**CQ8 What is your nationality/citizenship? (Kindly mark the relevant boxes if you hold dual nationality/citizenship).**

- *Paper Q/N Ref: CQ8* *Qualtrics Ref: CQ8*

This question allows for multiple answers.

**Criterion:**

- a) The respondent's chosen answer on paper is reflected correctly on Qualtrics
- b) If responded has indicated "other (please state)" or "Mixed Ethnicity (please state)", ensure that the answer typed in the space provided in Qualtrics matches the answer and language on paper.

---

**CQ9 How do you best describe your ethnic background?**

- *Paper Q/N Ref: CQ9* *Qualtrics Ref: CQ9*

**Criterion:**

- a) The respondent's chosen answer on paper is reflected correctly on Qualtrics
- b) If responded has indicated "other (please state)" or "Mixed Ethnicity (please state)", ensure that the answer typed in the space provided in Qualtrics matches the answer and language on paper.

---

**CQ10 What is your age?**

- *Paper Q/N Ref: CQ10* *Qualtrics Ref: CQ10*

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics

---

**CQ11 What is the name of the State or City in Malaysia you are currently residing in?**

- *Paper Q/N Ref: CQ11* *Qualtrics Ref: CQ11*

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics

---

**CQ12 How long have you lived in Malaysia?**

- *Paper Q/N Ref: CQ12* *Qualtrics Ref: CQ12*

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics

**CQ13 What is your marital status?**

- *Paper Q/N Ref: CQ13*

*Qualtrics Ref: CQ13*

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics  
(If 'Married/in Marital relationship' is Selected, Respondent will be shown CQ14. If not, CQ15 will appear).

**CQ14. Please state your spouse/partner's occupation:** \_\_\_\_\_

- *Paper Q/N Ref: CQ14*

*Qualtrics Ref: CQ14*

**Criterion:**

- a) The respondent's chosen answer on paper is reflected correctly on Qualtrics
- b) If the respondent did not answer this question, indicate a dash (-) in the space provided and proceed with next question.

**CQ15. Are you currently a full-time stay-at-home parent?**

- *Paper Q/N Ref: CQ15*

*Qualtrics Ref: CQ15*

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics.  
All other comments/scribbling in the area are ignored.  
(If respondent selected 'Yes', CQ16 & CQ17 WILL NOT APPEAR on Qualtrics. Jumps to CQ18)

**CQ16 Please state your occupation:** \_\_\_\_\_

- *Paper Q/N Ref: CQ16*

*Qualtrics Ref: CQ16*

**Criterion:**

- a) The respondent's chosen answer on paper is reflected correctly on Qualtrics
- b) If the respondent did not answer this question, indicate a dash (-) in the space provided and proceed with next question.

**CQ17 Which of the following best describe your working hours?**

- *Paper Q/N Ref: CQ17*

*Qualtrics Ref: CQ17*

**Criterion:**

- a) The respondent's chosen answer on paper is reflected correctly on Qualtrics
- b) If the respondent selected 'Other (please state)', type the answer indicated on the Paper Q/N onto Qualtrics.

**CQ18 Please state the ages of all your children**

- *Paper Q/N Ref: CQ18*

*Qualtrics Ref: CQ18*

**Criterion:**

- a) The respondent's chosen answer on paper is reflected correctly on Qualtrics – type exactly what was written on the paper Q/N.
- b) If a parent has indicated dash (-) on any space, DO NOT type these on Qualtrics

**CQ19 Other than yourself, who else lives in your home?**

- *Paper Q/N Ref: CQ19*

*Qualtrics Ref: CQ19*

This question allows for multiple answers.

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics.  
If the respondent has ticked 'Other', do type the answer in the space provided.



**CQ20 Mark the highest level of education that you have completed**

- *Paper Q/N Ref: CQ20* *Qualtrics Ref: CQ20*

**Criterion:**

- The respondent's chosen answer on paper is reflected correctly on Qualtrics.
- If the respondent has crossed out inappropriate information on their chosen answer, e.g. **Certificate**/Diploma; ignore the marking on Qualtrics. Qualtrics will only allow you to enter the chosen answer.

**CQ21 How often do you use the following language/s to talk/communicate with your child who is between 2 years old and 4-years old (24 months - 59 months old)? Please mark as appropriate.**

- *Paper Q/N Ref: CQ21* *Qualtrics Ref: CQ21*

This question must be answered before one can proceed to the next question.

**Criterion:**

- The respondent's chosen answer on paper is reflected correctly on Qualtrics.
- If the respondent has not indicated/ticked her answer in any category on paper Q/N, select and click 'Not Applicable' on Qualtrics.
- If there are unanswered categories in this question, you will not be able to proceed to the next question. If you see the following in red:

**Sorry, you cannot continue until you correct the following:**

- Issue 1
- o Please answer all choices.

Repeat steps a) and b) and proceed to next question.

**CQ22 Irrespective of which language/languages you use, approximately how many hours per day do you spend time talking/communicating with your child who is between 2 years old and 4-years old (24 months - 59 months old)?**

- *Paper Q/N Ref: CQ22* *Qualtrics Ref: CQ22*

This question must be answered before one can proceed to the next question.

**Criterion:** The respondent's chosen answer on paper is reflected correctly on Qualtrics.

**CQ23 Please give us some information on the language/languages you know, as applicable.**

- *Paper Q/N Ref: CQ23* *Qualtrics Ref: CQ23*

This question must be answered before one can proceed to the next question.

**Criterion:**

- The respondent's chosen answer on paper is reflected correctly on Qualtrics
- If respondent has indicated 'Other Languages/Dialects', type the language in the space provided
- If the respondent has not indicated/ticked her answer in any category on paper Q/N, then select and click 'Not Applicable' on Qualtrics.
- If there are unanswered categories in this question, you will not be able to proceed to the next question. If you see the following in red:

**Sorry, you cannot continue until you correct the following:**

- Issue 1
- o Please answer all choices.

Repeat steps a), b), c) and proceed to next question.

**CQ24 Please indicate your native/non-native languages. Please also indicate your 1st language, and your 2nd, 3rd or 4th language, if you are bilingual or multilingual.**

• *Paper Q/N Ref: CQ24*

*Qualtrics Ref: CQ24*

**This question must be answered before one can proceed to the next question.**

**Criterion:**

- The respondent's chosen answer on paper is reflected correctly on Qualtrics
- If the respondent has indicated 'Other Languages/Dialects', type the language in the space provided
- If the respondent has not indicated/ticked her answer in any category on paper Q/N, select and click 'Not Applicable' on Qualtrics.
- If there are unanswered categories in this question, you will not be able to proceed to the next question. If you see the following in red:

**Sorry, you cannot continue until you correct the following:**

- Issue 1
- Please answer all choices.

Repeat steps a), b), c) and proceed to next question.

### *Part III - Questions 25-27*

**CQ25. Please rate the importance of the following to your cultural identity (or culture). Please state any other aspect/s that might reflect your cultural identity under 'Other'.**

• *Paper Q/N Ref: CQ25*

*Qualtrics Ref: CQ25*

**Criterion:**

- The respondent's chosen answer on paper is reflected correctly on Qualtrics
- All other comments/scribbling outside the allocated space to be ignored
- If the respondent **HAS** ticked 'Other(please state)' category, ensure that the stated answer is typed on the space provide in Qualtrics. If there is no answer leave the space blank on Qualtrics.
- If the respondent **HAS NOT** ticked 'Other(please state)' category, **LEAVE THAT CATEGORY BLANK** on Qualtrics and proceed to next question.

**CQ26 Tell us about the TWO most important aspect of your family beliefs/values.**

• *Paper Q/N Ref: CQ26*

*Qualtrics Ref: CQ26*

**This question must be answered before one can proceed to the next question.**

**Criterion:**

- The respondent's chosen answer on paper is reflected correctly on Qualtrics. According to the respondent's language choice, correctly type the respondent's answers in the space provided. You will need to indicate the number/s before typing; i.e.: (i) \_\_\_\_\_ and )ii) \_\_\_\_\_
- All other comments/scribbling outside the allocated space to be ignored
- If the respondent's did not answer this question, indicate a dash (-) in the space provided and proceed with the next question

- d) If there are unanswered categories in this question, you will not be able to proceed to the next question. If you see the following in red:

**Sorry, you cannot continue until you correct the following:**

- Issue 1
- o Please answer all choices.

Repeat steps a), b), c) and proceed to next question.

---

**CQ27. What might be the MAIN purpose of your play with your young child?**

- *Paper Q/N Ref: CQ27* *Qualtrics Ref: CQ27*

Question CQ27 on Qualtrics is designed whereby only ONE answer can be provided.

**Criterion:**

- a) The respondent's chosen answer on paper is reflected correctly on Qualtrics.
- b) If the respondent has ticked more than one answer on Paper Q/N, click "Others (please specify)" category on Qualtrics and type all of respondent's answers in the space provided in the respondent's language choice
- c) If the respondent has ticked "To teach my child words" and "to have fun with my child" on the paper Q/N, click on "Other (please state)" on Qualtrics and type "*Both the above*" (for English) and "*Kedua-dua di atas*" (for Malay)
- d) If the respondent has ticked "To teach my child words" and "to have fun with my child" **AND** added another answer on the "Other (please state)" on paper Q/N, click on "Other (please state)" on Qualtrics and type "*Both the above*" **AND** the other added answer.

---

**CQ28. If you would like to share any other information or comment, we would like to hear from you.**

- *Paper Q/N Ref: CQ28* *Qualtrics Ref: CQ28*

**Criterion:**

- a) The respondent's chosen answer on paper is reflected correctly on Qualtrics, in the respondent's language choice
- b) All other comments/scribbling outside the allocated space to be ignored
- c) If there is no answer, leave the space blank and proceed to the next question.

---

## INTEREST IN REPORT AND NEXT STUDY

**Criterion:**

- a) The respondent's chosen answer on paper is reflected correctly on Qualtrics
- b) Respondent's contact details-number, email & name typed correctly on Qualtrics
- c) If the respondent has not indicated her number, email or name on the paper Q/N, indicate a dash (-) in the space provided and proceed with the next question.

*Once the "NEXT" arrow is clicked at this point, the survey will end here. Proceed with the next participant's survey form.*

# Appendix I

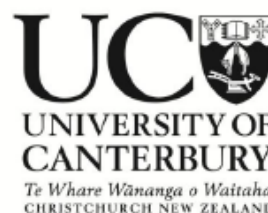
## Study 2 Informed Consent Form

Department of Communication Disorders

College of Science

Tel: +64 3 364 2431, Clinic: +64 3 364 2408, Fax: +64 3 364 2760

[www.cmds.canterbury.ac.nz](http://www.cmds.canterbury.ac.nz)



### **CONSENT FORM**

**PhD Research Project entitled:**  
***"Parent-child interactions across cultures"***

**Sharimila Magdeline Adaikkalasamy**

Room 203, Child Language Centre,

Department of Communication Disorders

Private Bag 48000

Christchurch 8140, NEW ZEALAND

Phone: +6 019-3519095 (Malaysia)

Phone: +64 3 364 2987 ext. 8193 (New Zealand)

Email: [sharimila.adaikkalasamy@pg.canterbury.ac.nz](mailto:sharimila.adaikkalasamy@pg.canterbury.ac.nz)

I have read and understood the information sheet for the research project on "*Parent-child interactions across cultures*".

On this basis, my child, \_\_\_\_\_ (your child's name),  
age \_\_\_\_\_ (your child's age in months), and I give consent to participate (and  
be both audio-recorded and video-taped) in this research project with the understanding  
that anonymity will be preserved. I note that the interview session will only be audio-  
recorded. I understand that I can ask to withdraw from the study at any time.

I understand that any presentations or publications resulting from this project will not  
refer to me or anyone in my family by name.

I note that the project has been reviewed **and approved** by the University of  
Canterbury Human Ethics Committee.

Thank you.

NAME (please print): .....

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

---

#### **NOTE:**

**Thank you for agreeing to participate in this study. Kindly indicate if you would  
like to receive the following:**

(i) A summary of the findings of this study?

☐ Yes

☐ No

(ii) A copy of the video recording?

☐ Yes

☐ No

Page 1 of 1

Speech-Language Therapy programme accredited by the New Zealand Speech-Language Therapists' Association  
Audiology programme endorsed by the New Zealand Audiological Society

University of Canterbury Private Bag 4800, Christchurch 8140, New Zealand. [www.canterbury.ac.nz](http://www.canterbury.ac.nz)



## Appendix J

### Study 2 Information Sheet

Department of Communication Disorders

College of Science

Tel: +64 3 364 2431, Clinic: +64 3 364 2408, Fax: +64 3 364 2760

[www.cmds.canterbury.ac.nz](http://www.cmds.canterbury.ac.nz)



#### **INFORMATION SHEET**

**PhD Research Project entitled: "Parent-child interactions across cultures"**

**Dear Parent,**

Thank you for expressing interest in our second study. We would like to invite you and your child who is between 2 years and 4 years of age (24 - 59 months old) to take part in this research project titled "Parent-child interactions across cultures".

#### **Aim of the Research Study**

The aim of this project is to study the various ways mothers interact with their young children.

#### **Who can participate in this study?**

- (i) All mothers who have completed the Questionnaire for the research project entitled: "Beliefs and practices in parent-child interactions across cultures"; and
- (ii) Their child who is between 2-years and 4-years old (24 - 59 months old) at the time the study is undertaken.

#### **Where will this research study be conducted?**

This study will be carried out at Care Speech & Language Therapy Centre, Suite B-13A-6, Megan Avenue 2, 12, Jalan Yap Kwan Seng, 50450 Kuala Lumpur.

#### **How will the research be conducted?**

When we meet with you and your child at the above facility, your names and contact details will be noted initially. However, you and your child will be given a number so that only the principal researcher (Sharimila Adaikkalasamy) will know. We would then lead you to a child friendly room. Here, we would ask you to talk with your child as you would usually do at home. This will take 5-10 minutes. Following this, you will be given a set of age-appropriate play items and materials. We will ask you to use these play items and materials and talk with your child as you would usually do at home. This will take about 10-15 minutes. At the end of this session, your child's participation in the study will be complete. We will provide your child with more play items/materials so that the principal researcher can talk with you. The principal researcher will then engage you in discussion that will take about 15 minutes. She will ask you open-ended questions to explore your views on young children. A copy of the transcribed audio-recording can be made available to you for verification purposes. There are no identified risks when completing this project.

Your talk time with your child in both the rooms will be both videotaped and audio-recorded with your written consent. The video- and audio-tapes will be made available for your viewing and if you would like to have a copy of the tapes, these can be given to you upon completion of our entire study. The interview session with you will only be audio-taped. These tapes will only be identified by numbers and not by your name.

Participation is entirely voluntary. You may withdraw your participation or information at any time without penalty.

#### **Confidentiality**

All information provided (including recordings obtained) is strictly confidential and will be used for the sole purpose of this study. The information provided and the recordings obtained (audio and video-tapes) will not be identifiable to your name or your child's name. All data (including audio and video recordings) will be secured in a locked filing cabinet in the Child Language Centre in Christchurch or in a locked bag when away from Christchurch. All electronic data pertaining to this study will be stored confidentially in a password-secured computer. Only Sharimila and her

Page 1 of 2

Speech-Language Therapy programme accredited by the New Zealand Speech-Language Therapists' Association  
Audiology programme endorsed by the New Zealand Audiological Society

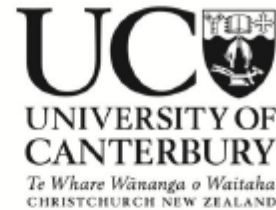
University of Canterbury Private Bag 4800, Christchurch 8140, New Zealand. [www.canterbury.ac.nz](http://www.canterbury.ac.nz)

## Department of Communication Disorders

College of Science

Tel: +64 3 364 2431, Clinic: +64 3 364 2408, Fax: +64 3 364 2760

[www.cmds.canterbury.ac.nz](http://www.cmds.canterbury.ac.nz)



supervisors, Professor Thomas Klee and Associate Professor Catherine Moran will have access to the raw data.

The results of the project will be written up and submitted to the university without reference to your name or your child's name. A manuscript may also be submitted to a scientific journal for review and eventually published. Any personal data or information provided in the study (including recordings obtained) will not be divulged or identifiable to you. No names will be used in any of our reports or presentations arising from this study. All raw data pertaining to this study will be stored in a confidential manner for the required 10 years, after which these will be completely destroyed. The completed PhD thesis will be a public document via the University of Canterbury library database.

### Who is conducting this research?

This research project is being carried out by Sharimila Adaikkalasamy as part of her PhD program at the University of Canterbury under the supervision of Professor Thomas Klee and Associate Professor Catherine Moran. This research project has been reviewed and approved by the University of Canterbury Human Ethics Committee.

### Benefits

There is no direct benefit or payment for participation in this study. Your contribution in this study will help us identify the various ways mothers (residing and raising their children in Malaysia) interact with their children. This will help us make recommendations in the development and delivery of culturally appropriate language intervention programs and service for young children, in particular, for children with speech and/or language difficulties.

### Token of Appreciation

As a token of our appreciation in participating in our study, you will be invited to attend a talk/workshop session (Free of Charge) on *"Strategies to improve young children's communication and interaction skills"* in July/August 2013. Sharimila Adaikkalasamy will be conducting this session in her capacity as a qualified and experienced Speech-Language Pathologist. Your participating child will also receive a complimentary children's book gift.

### Yes, I would like to participate in this study. What do I need to do?

If you are happy to participate in the study, please complete and sign the attached consent form and email it to Sharimila. Sharimila will then contact you to arrange an appointment that is convenient for you and your child. You can say yes or no to participating in this study and you can change your mind at any time if you don't want to continue.

If you have any concerns about participating in this project, kindly contact Sharimila by email at [sharimila.adaikkalasamy@pg.canterbury.ac.nz](mailto:sharimila.adaikkalasamy@pg.canterbury.ac.nz) or telephone at +6 019 3519095. Professor Thomas Klee and Associate Professor Catherine Moran can also be contacted at [thomas.klee@canterbury.ac.nz](mailto:thomas.klee@canterbury.ac.nz) and [catherine.moran@canterbury.ac.nz](mailto:catherine.moran@canterbury.ac.nz) respectively.

Thank you.

Yours sincerely,  
**Sharimila Adaikkalasamy**  
PhD Candidate  
Department of Communication Disorders  
University of Canterbury,  
Private Bag 4800  
CHRISTCHURCH 8140,  
New Zealand

Page 2 of 2

Speech-Language Therapy programme accredited by the New Zealand Speech-Language Therapists' Association  
Audiology programme endorsed by the New Zealand Audiological Society  
University of Canterbury Private Bag 4800, Christchurch 8140, New Zealand. [www.canterbury.ac.nz](http://www.canterbury.ac.nz)

## Appendix K

### The Standard SALT Transcription Conventions used in the Study

These were extracted from the SALT User Guide (Miller et al., 2012) and include:

- (i) Transcript format
  - \$ To identify speakers in the transcript
  - M Mother utterance
  - C Child utterance
  - + To identify mother and child's ID/initials, child's age, child's gender, language used, mother's ethnicity, mother's occupation level, date of observation and transcriber initials
  - - Time marker
- (ii) End of utterance punctuation
  - . Statement, comment
  - ! Surprise, exclamation
  - ? Question
  - ~ Intonation prompt
  - ^ Interrupted utterances
  - > Abandoned utterances
- (iii) { } Comments within an utterance. *Example: C Lookit {C points to box}. Nonverbal utterances of communicative intent are place in braces. Example" C {nods}.*
- (iv) Unintelligible segments.
  - X is used to mark unintelligible sections of an utterance, word, or an entire unintelligible utterance, irrespective of the length of utterance (Klee, 2010).
  - 'NAud' was used to indicate inaudible utterances.
- (v) Overlapping speech.
  - < > is used to mark the words that occur at the same time, when the speakers are speaking at the same time *Example: C I want you to do it < > for me*  
*E <ok>*
- (vi) Linked words
  - The underscore “\_” is used to link multiple words so they are treated as a single word. Examples include titles of movies and books, compound words, proper names, and words or phrases repeated multiple times.
- (vii) Sound effects and idiosyncratic forms
  - The percent sign % is used to identify sound effects that are essential to the meaning of the structure of the utterance. Non-essential sound effects are entered as comments.  
*Example 1: C The dog went %woof\_woof*  
*Example 2: C The dog barked {woof woof}.*
  - The percent sign is also used to identify idiosyncratic forms: non adult-like production of very young children that are consistent in reference to an object, person, or situation.  
*Example 1: C See %vroom {car} Example 2: C My %coopa {cookie}*
- (viii) Spelling conventions concerning filled words (*e.g., AH, ER, etc., with the code [FP]*), yes words (*e.g., OK, AHA, UHHUH, etc.*), no words (*e.g., NO, NOPE, etc.*), numbers (*e.g., twenty-one, 21*), concatenatives (*e.g., GONNA< HAFTQA, etc.*) and other English spellings (*e.g., AIN'T, DON'T, OURS, etc.*).

